TEXTILE TECHNOLOGY DIGEST

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Abstracts

ORGANIC FIBERS I

Artificial and synthetic fibers. Synthetics continue growth and diversification. Anon. *Textile World 97,* No. 9, 113-28 (Sept. 1947).

Figures (1947) on production and consumption of continuous filaments and staples are presented in chart form. TTD: 1-48

Fibers. Natural and man-made fibers. A. J. Turner. *J. Textile Inst. 38,* P411-13 (Aug. 1947).

A lecture on the molecular structure of natural and man-made fibers and their future use in textiles. TTD: 1-48

Vegetable fibers I 1

Retting flax. Developments in production of retted flax in Northern Ireland. D. A. Derrett-Smith. *J. Textile Inst. 38,* P247-56 (Aug. 1947).

The anatomy of flax is described and its relation to retting given. A discussion of retting equipment and the retting and drying of straw is surveyed. Methods of determining the end-point in retting are also reviewed. TTD: 1-48

Animal fibers I 2

Norwegian wool production. Analysis of Norwegian wool production in 1947. Erling Sande. *Norsk Tekstiltidende 28,* 151-4 (Sept. 1947); *in Norwegian.*

Detailed information on the Norwegian wool production, its size, quality, utilization and value. TTD: 1-48

Sericulture. Sericulture in British Commonwealth. Anon. *Fibres 8,* 222-3 (July, 1947).

A memorandum on sericulture in the British Commonwealth published in the Bull. of Imperial Inst. is summarized. TTD: 1-48

GERMAN WOOL AND WORSTED INDUSTRY IN WORLD WAR II (Textile Series Report No. 30, Office of QMG). Werner von Bergen, compiler. Office of Technical Services, U. S. Dept. of Commerce; Apr. 1947; 186 pp. TTD: 1-48

SURVEY OF VARIOUS MANUFACTURING METHODS IN USE BY WORSTED INDUSTRY FOR PRODUCTION OF CLOTH, SERGE, O. D. (Textile Series, Report No. 27, Office of QMG). Wm. B. Williamson. Office of Publication Board, U. S. Dept. of Commerce; Feb. 1947; 39 pp. TTD: 1-48

WORSTED INDUSTRY. J. Dumville & S. Kershaw. Pitman; 157 pp.; price 7s 6d.

Reviewed in *Fibres 8,* 128-9 (Apr. 1947). TTD: 1-48

Artificial fibers I 3

Carboxymethyl cellulose. Fiber chemical uses of new cellulose derivative. W. A. Preston. *Fibres 8,* 56-7 (Feb. 1947).

Carboxymethyl cellulose, or cellulose glycollic acid, is both a cellulose ether and at the same time an acid and capable of forming salts, but is not an ester. Notes on this cellulose derivative and its possibilities for films and fibers are discussed. TTD: 1-48

Rayon alginates. Alginates. K. W. L. Kenchington. *Fibres 8,* 44-8, 73-6 (Feb., Mar. 1947).

The discovery, development, manufacture, properties, and uses of alginate fibers are reviewed. Special uses of calcium alginate rayon in novelty materials are discussed. TTD: 1-48

Rayon nomenclature. Rayon nomenclature. Anon. *Fibres 8,* 119-22 (Apr. 1947).

A number of suggestions on rayon nomenclature are discussed in several contributions. TTD: 1-48

Composite filament. Wayne A. Sisson. USP 2 428 046, Sept. 30, 1947.

Two different types of viscose solution, one containing a pigment, are spun through an extrusion device to form filaments of composite character, whose transverse cross-sections comprise 3 distinct components, a colorless one between 2 colored ones. Different shrinkage characteristics of the 2 viscoses impart a crimped condition to the filaments. TTD: 1-48

Pot spinning. Pedro F. Martinez. Can. P. 443 906, Sept. 2, 1947.

In a pot spinning process compressed air is introduced

into the yarn holders as the yarn holders are pressed into the rotary vessels holding the freshly spun yarn, the compressed air thus tending to force the yarn onto the holders and facilitate withdrawal of the full package.
TTD: 1-48

Rayons I 3 a

Rayon. Crimped viscose staple will further expand wide use of viscose rayon. Anon. *Traveler* No. 122, 8-14 (Jan. 1948).

Uses of viscose, acetate, and crimped viscose staple rayons are reviewed. TTD: 1-48

Rayon from bamboo. Bamboo pulp: its possibilities for rayon manufacture. Anon. *Fibres 8,* 82-4 (Mar. 1947).

Certain species of bamboo such as Eetta bamboo are capable of yielding a high alpha cellulose content and by modifications of the usual wood pulp treatment have possibilities for rayon manufacture. The process for manufacturing viscose rayon from bamboo is briefly reviewed. TTD: 1-48

Esterifying cellulose. Clifford I. Haney, Mervin E. Martin & Arnold J. Rosenthal (to Celanese Corp. of Am.). USP 2 427 403, Sept. 16, 1947.

Cellulose esters, such as cellulose acetate, with a relatively low degree of esterification, are prepared by esterifying cellulose with an aliphatic acid anhydride in the presence of an organic acid solvent and an inorganic acid catalyst. The catalyst is partially neutralized, preferably about 66%, and ripening to the acyl value is effected at a temperature from 50 to 117°C, while water is added continually to the ripening cellulose at an hourly rate of 10-300% of the weight of the original cellulose until the total water added for ripening comprises 100-1200% of the weight of the original cellulose.
TTD: 1-48

Rayon package cover. Am. Viscose Corp. Brit. P. 583 289. *Textile Mfr. 73,* 341 (July, 1947).

Rayon cakes may be provided with a protective cover consisting of a paper wrapper, in the form of a sleeve, having short slits parallel to the axis of the sleeve whereby the diameter of the cover may be easily expanded or reduced. TTD: 1-48

Regenerated cellulose filaments. Brit. Celanese, Ltd. Brit. P. 583 300. *Textile Mfr. 73,* 341 (July, 1947).

Cellulose in aqueous alkali solutions, oxidized with periodic acid or nitrogen tetroxide, is extruded into an acid coagulating bath to precipitate the cellulose.
TTD: 1-48

Drying filaments by HF. Am. Viscose Corp. Brit. P. 584 070. *Textile Mfr. 73,* 388 (Aug. 1947).

Freshly spun artificial filaments (*e. g.,* viscose rayon) are dried, under uniform heat conditions and a constant tension, by passing them through a set of 3 electrodes, preferably U-shaped, of which the middle one is connected to one pole of a source of HF electric current.
TTD: 1-48

Rayon spinning. Am. Viscose Corp. Brit. P. 584 231. *Textile Mfr. 73,* 389 (Aug. 1947).

Apparatus for spinning rayon filaments under conditions causing a corrosive atmosphere consists of filament carrying devices, and barriers to the corrosive atmosphere between the devices and their bearings. Openings in the barriers afford clearances entirely surrounding the connections between the bearings and the devices, means being provided for passing an inert fluid medium through the clearances. TTD: 1-48

Protein fibers I 3 b

Multi-filament protein yarn. R. & J. Pickles. Brit. P. 583 292. *Textile Mfr. 73,* 341 (July, 1947).

Dissolved protein is extruded into a coagulating bath and the extruded filaments are conducted through a duct in which they are subjected to the action of jets of dry air or gas. In this manner they are separated and individually dried, the dried filaments being then re-collected and spun together into a single continuous yarn. TTD: 1-48

Protein fiber treatment. Natl. Dairy Products Corp. Brit. P. 584 353. *Textile Mfr. 73,* 389 (Aug. 1947).

Artificial protein fibers are treated with a solution containing 5-15% acetic anhydride and 5-7% acetic acid in an inert solvent in order to improve the chemical resistance and dyeing properties of the fibers.
TTD: 1-48

Synthetic fibers I 4

Acrylonitrile. Vinyl cyanide in rayon manufacture. Anon. *Fibres 8,* 200-2 (June, 1947).

Vinyl cyanide, or acrylonitrile, can be polymerized or copolymerized with other chemical compounds to yield polymers which can be made into textile fibers. They can be produced by both wet and dry spinning methods. Production of vinyl cyanide and its polymers, their properties, and developments in fiber production are briefly noted. TTD: 1-48

Bristles from thermoplastic filaments. Geo. H. Wandel & Theodore H. Rider (to Lever Bros. Co.). USP 2 426 328, Aug. 26, 1947.

Thermoplastic bristles (particularly for tooth brushes) are melted at the free end to the desired contour, which leaves enlarged solidified portions of the bristle material. By pulling the melted material off after it solidifies, the ends are left in a clean, polished condition. It is claimed that brushes treated in this way are much smoother, more regular in contour and more finished in appearance than brushes finished by methods hitherto known.

TTD: 1-48

Acrylonitrile polymers. Imperial Chemical Industries, Ltd. Brit. P. 583 939. *Textile Mfr. 73,* 387 (Aug. 1947).

A solution of an acrylonitrile polymer in a volatile organic solvent is extruded into a spinning bath of glycerol, heated to at least 100°C. Filaments of high tenacity are produced. TTD: 1-48

Thermoplastic resin filaments. Carbide & Carbon Chemicals Corp. Brit. P. 584 066. *Textile Mfr. 73,* 388 (Aug. 1947).

To improve the softness and loop-break strength of thermoplastic resin filaments, a coating of an insoluble powder is applied to the surfaces of at least 2 contacting filaments, the filaments being then stretched in moist heat at 90-200°C. TTD: 1-48

Fiber applications I 5

Felt hats. U-K. hat industries and research. Anon. *Fibres 8,* 305-6 (Sept. 1947).

A brief review of the felting, carroting, and proofiing processes in felt manufacture and some of the problems confronting the Research Association of the hat industry.

TTD: 1-48

Filter element. Paul F. McDermott (to Johns-Manville Corp.). USP 2 426 405, Aug. 26, 1947.

A filter element formed of layers cut from a resilient, felted mat, preferably composed of mineral wool fibers, is maintained under compression by forces acting transversely to the faces of the layers. This imparts mechanical stability to the construction, and assists in preventing leakage between the filter medium and the imperforate heads or other supporting elements of filter units. Compression of the layers of the fibrous material also serves to equalize the size of the pores or voids between fibers. The filter medium may be in the form of superposed rings or ring-like sections of any desired contour, with the assembled sections providing one or more interior passages through which the filtered gas or the gas to be filtered may be passed. The filter is especially designed for removing dust, dirt, smoke, tars, oils and other particles from air or other gases.

TTD: 1-48

Absorbent pad. Frederick W. Schreiber (to Johnson & Johnson, Ltd.). Can. P. 443 960-2, Sept. 2, 1947.

An absorbent pad, in which is incorporated a deodorant, comprises fibrous layers of varying thicknesses, to produce which 3 slivers of about the same size are fed through a drawing frame and 2 of the slivers are drafted about the same amount (for use along the lateral edges of the dressing), the third sliver being drafted a lesser amount (for use along the bottom of the dressing).

TTD: 1-48

Fiber processing I 6

Wool oiling. L. Marbach (to Petrie & McNaught, Ltd.). Brit. P. 583 747. *Textile Mfr. 73,* 342 (July, 1947).

Wool, previously cleaned, is soaked in an oil-in-water emulsion, squeezed to remove excess liquid, and dried.

TTD: 1-48

Wetting agent. H. C. Jansen & N. W. Barritt (to N. V. de Bataafsche Petroleum Maatschappij). Brit. P. 584 219. *Textile Mfr. 73,* 388 (Aug. 1947).

In a process for wetting out fibrous materials such as cotton, rayon, sisal and manila hemp, there is first applied a surface film of a mono-oxycompound or a mixture of such wherein the O atom is directly linked to a single C atom of a hydrocarbon radical having 8-11 C atoms. An aqueous solution of an anionic detergent or wetting agent is then applied. TTD: 1-48

INORGANIC FIBERS II

Dyeing glass fiber. Wm. L. Trobridge (to Owens-Corning Fiberglas Corp.). USP 2 428 302, Sept. 30, 1947.

In order to prevent bleeding or complete removal of the coloring on glass fibers by water, the fibers are coated with a water solution of a colored film-forming material such as gelatin, which is then insolubilized by reaction with formaldehyde. The coating material may also include a cationic-active amine compound as a surface lubricant or abrasion preventive. The dye in the coating material is preferably a formaldehyde-setting dye such as an azo dye containing resorcinol or m-amidophenol. TTD: 1-48

Asbestos fiber cleaning. Johnsons Co. Brit. P. 583 846 & 583 879. *Textile Mfr. 73,* 342 (July, 1947).

Milled asbestos fibers are scrubbed and washed with water to remove dust. They are then compacted into sheets, dried, fiberized, and the fibers released from the sheets, without reducing staple length, by compressed air. TTD: 1-48

Glass yarn. Corning Glass Works. Brit. P. 583 927. *Textile Mfr. 73,* 387 (Aug. 1947).

In the manufacture of glass yarn there is applied to the freshly spun glass fibers an adhesive and lubricant coating consisting essentially of an organosilicon compound. TTD: 1-48

FIBER TO YARN III

Fiber preparation III 1

Card. Blueprints of carding machine, type EL. Schubert & Salzer A-G. PB 33177-81. *Bibl. Sci. Ind. Reports 4,* 9 (Jan. 3, 1947).

The above 5 reports consist of detail and assembly drawings for the subject carding machine. Some of the drawings, stamped obsolete, have been superseded by new drawings, which are contained in the reports. Data tables are included. TTD: 1-48

Carding Fibro. Production rates in carding of short staple Fibro on revolving flat card. W. E. Morton & I. A. H. Shahin. *J. Textile Inst. 38,* P310-18 (Aug. 1947); *Textile Mfr. 73,* 297 (July, 1947).

Results from experimental work on carding short Fibro on the flat revolving card show that the working surfaces are capable of being more heavily loaded than is usual. Other methods of increasing the productivity of the flat cards are briefly reviewed. TTD: 1-48

Carding rayon. Spinning long staple rayon. S. A. G. Caldwell. *Textile Mfr. 73,* 307-9 (July, 1947).

Carding long staple rayon on flax and jute cards is discussed. Illustrated descriptions are given of a 5-pair and 7-pair roller card with details of pin projection and roller settings. TTD: 1-48

Carding wool. Some recent trends in woolen carding. R. W. Wright & A. Brearley. *J. Textile Inst. 38,* P319-39 (Aug. 1947); *Textile Mfr. 73,* 300, 302 (July, 1947).

The preparation of woolen blends for carding, automatic feeding of hoppers, and modern methods of carding are reviewed. The humidification of woolen mills to attain uniform conditions is briefly discussed. TTD: 1-48

Cards. Blueprints of carding machine with electric drive, type JPD. Schubert & Salzer A-G. PB 33147 (1934-40). *Bibl. Sci. Ind. Reports 4,* 8 (Jan. 3, 1947); 438 pp.; price $5.25 (Microfilm); $44.00 (Enlargement prints).

This report consists of detail and assembly drawings for the machine and an illustrated manufacturers' parts list. Some of the detail drawings are stamped obsolete. TTD: 1-48

Dabbing wool. New method of dabbing on Noble comb. T. F. Griffin. *Textile Mfr. 73,* 304-6 (July, 1947); *J. Textile Inst. 38,* P91-5 (Mar. 1947).

By a new method of dabbing, wool is inserted into the pins of the large circle of the Noble comb and at a later stage into the small circle. This eliminates having to dab in both circles at once and throws less strain on the dabbing brush. The use of a short knife for inserting the wool in the small circle is discussed. TTD: 1-48

Opening. Gradual opening done by wool rag picker. Gustav Zellnik, Textile World. *Textile World 97,* No. 9, 178 (Sept. 1947).

An improved rag and shoddy picker (developed by the Polish firm of G. Josephy's Erben) has a varying number of cylinders on which the number of pins is increased progressively. A more gradual opening is thus achieved and a more spinnable fiber produced. The dusting and garnetting processes are eliminated through the use of a strong exhaust system. TTD: 1-48

Wool-card feed. Electronic device controls wool-card feed. Gustav Zellnik, Textile World. *Textile World 97,* No. 9, 145, 266, 270 (Sept. 1947).

An electronic device, called Magnepoise, installed in the feed box of the cards, levels hopper deliveries by adjusting for variations in hopper levels.
LCL TTD: 1-48

Carding engine. I. Marsden & J. B. Rye (to Platt. Bros. & Co., Ltd.). Brit. P. 583 193. *Textile Mfr. 73,* 340-1 (July, 1947).

An automatic feeding and weighing hopper for use with carding engines comprises essentially a feed-interrupting means having 2 trap doors. The doors, operating in conjunction with the scale pan, close when a predetermined weight of fibers is delivered to the scale pan by an inclined spiked lattice. TTD: 1-48

Drawing roll. Albert Nau-Touron (to S. A. R. L. Fonderie de Precision). Can. P. 443 972, Sept. 2, 1947.

A pressure roll for a drawing frame comprises a tube, with removable plugs at the end, into which one or more additional tubes fitting one into another, may be introduced as weights. TTD: 1-48

Carding. Stanley Wilkinson (to Talbot Wool Combing Co., Division of Winslow Bros. & Smith Co.). Can. P. 444 038, Sept. 9, 1947.

In a method of carding wool and other fibers, a layer of fibers is split into 2 streams which are then fed to 2 sets of carding mechanisms, arranged one above the other, the 2 streams thus being separately but simultaneously carded. TTD: 1-48

Spinning III 3

Doubler. Blueprints of flyer doubler, type FL. Schubert & Salzer A-G. PB 33172-73 (n. d.). *Bibl. Sci. Ind. Reports 4,* 9 (Jan. 3, 1947); 895 pp.; price $6.00 (Microfilm); $89.50 (Enlargement prints).

The above 2 reports consist of detail and assembly drawings, and an illustrated manufacturers' parts list for this machine. Some of the drawings, stamped obsolete, have been superseded by new drawings which are contained in the reports. Data tables are included. TTD: 1-48

Ring spinning Effects of accessory influences on ring spinning of cotton and spun rayon. E. Honegger, Swiss Federal Inst. of Technology, and A. Fehr, Brown-Boveri & Co., Ltd. *J. Textile Inst. 38,* P353-80 (Aug. 1947); *Textile Mfr. 73,* 298-9 (July, 1947).

Results of experiments on the influence of accessory devices on ring spinning are discussed. Brushing of yarn balloons on anti-ballooning devices has been found to lead to increased thread breakages. Eccentrically mounted spindles cause irregular thread tensions and fluctuation in yarn tension due to varying winding diameter may be avoided by an adjusted spinning regulator. TTD: 1-48

Spinning. Mile-a-minute traveler must be right. Seth Carter. *Textile World 97,* No. 9, 161, 163, 258, 262, 266 (Sept. 1947).

Factors governing the selecting of travelers and tables comparing travelers are given.
LCL TTD: 1-48

Spinning cordage yarns. Modern thread and cordage manufacture. Wet spinning process; dry spinning process; spinning cordage yarns. Technologist. *Fibres 8,* 50-3, 85-8, 160-3 (Feb., Mar., May, 1947).

Dew retted and water retted flax are compared and harvesting factors examined. Spinning of cordage yarns is then discussed, with mechanical operations of wet spinning, dry spinning, and gill spinning given. Different types of dry spinning frames and the automatic spinner for cordage yarns are reviewed. TTD: 1-48

Spinning rayon staple. Influence of rayon staple on preparing and spinning machinery developments. H. Ashton, Courtaulds, Ltd. *J. Textile Inst. 38,* P340-52 (Aug. 1947); *Textile Mfr. 73,* 295-6 (July, 1947).

Fiber dimensions are not a limiting factor in spinning rayon staple since they may be made coarse or fine, long or short, etc. The influence on yarn strength of staple length and filament denier and the effect of variations of length and denier on yarn counts are discussed. Rayon staple spinning machinery must be capable of handling staple of varying lengths and denier. TTD: 1-48

Twister. Blueprints of stretching machine, type PBS and PP; blueprints of special twisting frame type SM. Schubert & Salzer A-G. PB 33154 (May, 1943). *Bibl. Sci. Ind. Reports 4,* 8 (Jan. 3, 1947); 571 pp.; price $6.00 (Microfilm); $57.00 (Enlargement prints).

This report consists of detail and assembly drawings and a manufacturers' parts list for the 2 types of stretching machines, and drawings for the twisting frame. TTD: 1-48

Twister. Blueprints of stretching ring twisting frame. Schubert & Salzer A-G. PB 33156 (June, 1941). *Bibl. Sci. Ind. Reports 4,* 8 (Jan. 3, 1947); 427 pp.; price $5.25 (Microfilm); $43.00 (Enlargement prints).

This report consists of detail and assembly drawings, and an illustrated manufacturers' parts list for this belt-driven machine. Some of the drawings are stamped obsolete. Rpm and distortion data tables are included. TTD: 1-48

Twister. Blueprints of ring twisting frame, type RI. Schubert & Salzer A-G. PB 33162-6. *Bibl. Sci. Ind. Reports 4,* 8 (Jan. 3, 1947).

These 5 reports consist of detail and assembly drawings for the machine. Some of the drawings are stamped obsolete. Data tables are included. TTD: 1-48

Twisting. Twist in flax yarns. S. A. G. Caldwell. *Fibres 8,* 219-21 (July, 1947).

Factors for twist calculations and the relation of twist to breaking strength and to elasticity are discussed. Limitations of ring frames and the application of overhung flyer frames to wet spinning flax are reviewed. TTD: 1-48

Worsted spinning. High class colored yarn production in worsted spinning. R. S. Audley. *Fibres 8,* 154-7 (May, 1947).

A brief discussion of methods of dyeing worsted yarn for spinning. Methods of dealing with the dyed worsted material in the preparation and spinning and some of the spinner's problems are reviewed. TTD: 1-48

Spinning cot. Enrique L. Luàces (to Dayton Rubber Mfg. Co.). USP 2 426 227, Aug. 26, 1947.

A spinning cot is constructed of rubber, synthetic rubber or the like in which is included from 30% to 70% of

ground or shredded cellulose sponge. These fibers break off or fall out at the surface producing a roughened surface which improves the drafting qualities of the cot. This surface stays constant during the life of the cot because as the surface wears down more fibers break off or fall out keeping the surface rough.
SPH TTD: 1-48

Long staple drafting. Benj: J. Zalkind (to Saco Lowell Shops). USP 2 426 425, Aug. 26, 1947.

A drafting mechanism for a spinning frame is shown in which the Saco-Lowell-Roth drafting system has been modified and expanded to draft combinations of fibers ranging from 1" cotton to 2 1/2" and 3" staple fiber. Spinning frames may be adapted to handle various blends of fibers with different drafting properties by changing the positions of the weighted back top roll and one or 2 additional slip rolls.
PMS TTD: 1-48

Winding III 4

Winding. Blueprints of yarn bundling press, type GP, AP and SH. Schubert & Salzer A-G. PB 33150 (Oct. 1942). *Bibl. Sci. Ind. Reports 4,* 8 (Jan. 3, 1947); 276 pp.; price $ 3.75 (Microfilm); $28.00 (Enlargement prints).

This report consists of detail and assembly drawings, and a manufacturers' parts list for the yarn bundling press. TTD: 1-48

Winding. Blueprints of mechanical single reel, type WF. Schubert & Salzer. PB 33153 (1926-28). *Bibl. Sci. Ind. Reports 4,* 8 (Jan. 3, 1947); 298 pp.; price $3.75 (Microfilm); $30.00 (Enlargement prints).

This report consists of detail and assembly drawings and a manufacturers' parts list for the type WF reel. TTD: 1-48

Winding machine. Athena winding machine. Anon. *Fibres 8,* 266-7 (Aug. 1947).

Athena high speed cop winding machines and hank winding machines are said to be able to run for extended periods with little maintenance. TTD: 1-48

Worsted yarn. Large packages in worsted trade. R. S. Audley. *Fibres 8,* 277-9 (Aug. 1947).

A discussion of large packages in drawing, spinning, and winding. TTD: 1-48

Thread tension control. Kurt E. Wilhelm (to U. S. Rubber Co.). USP 2 425 909, Aug. 19, 1947.

In a device for controlling the tension on the rubber thread for winding golf balls, a section of the thread of definite length is set in vibration by 2 small air jets.

An optical system through a photo-electric cell measures the frequency of vibration. Changes in frequency are fed as an electrical quantity to an amplifier which controls the resistance of the tension device. The result gives a tension that is proportional to the cross-sectional area of the thread so that unit stress is constant.
SPH TTD: 1-48

Winding machine. Edw. J. Abbott & Winthrop L. Perry (to Abbott Machine Co.). USP 2 426 167, Aug. 26, 1947.

By means of a mechanical device the winding bobbin is automatically changed and winding started on a fresh bobbin. Of special utility in the automatic winding of filling bobbins, it is closely related to 3 previous patents on winding machinery granted to the patentee.
SPH TTD: 1-48

Winding machine. Edw. J. Abbott & Winthrop L. Perry (to Abbott Machine Co.). USP 2 426 168, Aug. 26, 1947.

This patent is closely related to USP 2 426 167 and covers certain improvements. Among the objects are: to provide a more direct path for the thread from the supply package to the winding bobbin, to improve the thread guide mechanism, and to provide a more positive control of the thread during association of the thread with a fresh bobbin.
SPH TTD: 1-48

Winding. Foster Machine Co. Brit. P. 583 857. *Textile Mfr. 73,* 387 (Aug. 1947).

Thread is wound in barrel-shaped packages by traversing the thread onto a core, progressively and alternately increasing and decreasing the length of the traversing stroke, accelerating from the end to the middle of the package the feed of the winding thread and then decelerating from the middle to the end of the package. In this way the coils are staggered so as not to form ridges. TTD: 1-48

Yarn feed control. Pacific J. Thomas (to U. S. Textile Machine Co.). Can. P. 443 990, Sept. 2, 1947.

See USP 2 386 822, Oct. 16, 1945 (TTD: *2,* 530). TTD: 1-48

Yarn winder. Pacific J. Thomas (to U. S. Textile Machine Co.). Can. P. 443 991-2, Sept. 2, 1947.

See USP 2 395 521-2, Feb. 26, 1946 (TTD: *3,* 166). TTD: 1-48

Winder. Howard W. Doughty, Jr. (to Foster Machine Co.). Can. P. 444 350, Sept. 30, 1947.

See USP 2 402 739, June 25, 1946 (TTD: *3,* 367). TTD: 1-48

Yarn processing III 5

Steaming. Steaming of pure silk and synthetic fibers. Anon. *Fibres 8,* 98 (Mar. 1947).

The Sanderson system of vacuum steaming for silk and synthetic fibers is briefly discussed. TTD: 1-48

Fiber bonding. John Brandwood. Can. P. 444 214, Sept. 23, 1947.

Yarns of low density are produced without spinning from discontinuous fibers (*e. g.,* rovings) by impregnating packages of slubbings or rovings with a solution or dispersion of a liquid (which may be added to a dyebath), removing the excess liquid by air pressure, and then drying. TTD: 1-48

Yarn products III 6

Cordage. Modern thread and cordage manufacture. Production of ply threads, etc.; tube twisting and cabling. Technologist. *Fibres 8,* 229-32, 310-12 (July, Sept. 1947).

Ply or twist products are those made from their component yarns in a single twisting operation, while cabled products are those which require 2 twisting operations and are composed of 2 or more ply yarns. Methods and machinery for forming ply products and cabled products are reviewed. TTD: 1-48

Cotton sewing thread. Thread, cotton (with amendment No. 1, Apr. 8, 1942). U. S. Bur. of Aeronautics. PB 48518 (Oct. 1940). *Bibl. Sci. Ind. Reports 4,* 23 (Jan. 3, 1947); 8 pp.; price $1.00 (Microfilm or Photostat).

Three types of silk finish, unbleached white, right-hand twist cotton thread are covered. Material, workmanship, construction and physical properties, methods of sampling, inspection and tests, and instructions for packaging, packing, and marking for shipment are specified. There are 4, 6 and 11 ply thread intended for use in hand sewing during assembly of parachute and parachute packs in place of 30-3 ply and 6-ply and 9-ply lock-stitch-twist linen thread respectively. Type II is intended for use in the sewing of pilot parachutes and type III in the sewing of tow targets and pilot parachutes. TTD: 1-48

Sewing thread. Blueprints of sewing thread polishing-machine, type NP. Schubert & Salzer A-G. PB 33151 (1938-42). *Bibl. Sci. Ind. Reports 4,* 8 (Jan. 3, 1947); 373 pp.; price $4.50 (Microfilm); $37.50 (Enlargement prints).

This report consists of detail and assembly drawings for the machine, some of which are stamped obsolete. TTD: 1-48

Thread machine. Blueprints of double-stage thread machine, type CZ. Schubert & Salzer A-G. PB 33155 (1935-1940). *Bibl. Sci. Ind. Reports 4,* 8 (Jan. 3, 1947); 420 pp.; price $5.00 (Microfilm); $42.00 (Enlargement prints).

This report consists of detail and assembly drawings and an illustrated manufacturers' parts list for the thread machine. TTD:1-48

Yarn characteristics. Raw materials for handknitting yarns. R. S. Audley. *Fibres 8,* 203-4 (June, 1947).

Wool yarn is most favored for handknitting purposes, but man-made fiber yarns are being used to an increasingly greater degree. Characteristics of various yarns and yarn blends for handknitting are reviewed. TTD: 1-48

Tire yarn. U. S. Rubber Co. Brit. P. 583 228. *Textile Mfr. 73,* 341 (July, 1947).

A plied cotton yarn, particularly for use in tire cord, is composed of 2 or more single yarns twisted together, with a twist multiple of 7 or more. The twist of each single yarn as it lies in the finished ply is the same and is in a direction opposite to the twist of the plied yarn. TTD: 1-48

Mop yarns. Walter S. Briggs. Can. P. 443 895, Sept. 2, 1947.

See USP 2 409 660, Oct. 22, 1946 (TTD: *4,* 47). TTD: 1-48

YARN TO FABRIC IV

Yarn preparation IV 1

Slasher controls. Modern slasher room features automatic controls. P. M. Thomas, Textile World. *Textile World 97,* No. 9, 135, 137, 157 (Sept. 1947).

Automatic slasher controls have improved slasher production and warp quality at Seminole Mills. Mill production is in synthetic fiber blends. A Brown Moist-O-Graph is used in conjunction with a variable-speed drive. TTD: 1-48

Slashing. Warp costs cut by continuous dyeing slasher. Wm. A. Newell, Textile World. *Textile World 97,* No. 9, 155, 157 (Sept. 1947).

A combination of warp dyeing and slashing, whereby yarn is dyed and sized in a single operation, is briefly described.
LCL TTD: 1-48

Warping. Colored worsted warping. R. S. Audley. *Fibres 8,* 296-300 (Sept. 1947).

Types of warping mills and creels, warping procedure

and calculations, beaming-off, conditioning of warps, and some warping defects are discussed. TTD: 1-48

Warp drier. Paul R. Rose. USP 2 426 415, Aug. 26, 1947.

A circulated-air drying chamber for warp yarns and the like consists of an inner chamber, through which the yarn passes upward over a roller then downward, and 2 outside chambers containing the heating units. Provision is made to quickly exhaust the hot air from the inner chamber in case the yarn has to be stopped.
SPH TTD: 1-48

Size for nylon warps. E. I. du Pont de Nemours & Co. Brit. P. 583 912. *Textile Mfr. 73,* 387 (Aug. 1947).

A size for warp sizing of yarns, particularly nylon, comprises a mixture of a water-sensitive hydroxylated polyvinyl resin and a water-soluble alkylol urea-formaldehyde resin. TTD: 1-48

Weaving IV 2

Weaving developments. Developments in weaving. A. Glover. *J. Textile Inst. 38,* P300-9; *Textile Mfr. 73,* 346-7 (Aug. 1947).

The present position and trends in weaving and looms in Britain are reviewed. Advantages of automatic looms are discussed, and some notes on various types of automatic looms are given. TTD: 1-48

RAYON WEAVING AND THROWING IN GERMANY (Textile Series Report No. 42, Office of QMG). E. C. Geier, compiler. Office of Technical Services, U. S. Dept. of Commerce; June, 1947; 73 pp. TTD: 1-48

Looms IV 2 a

Bobbin stripper. Mordale bobbin stripper. Anon. *Fibres 8,* 170 (May, 1947).

A description of the Mordale bobbin stripper. This machine clears the bobbin of weft as soon as it is discharged from a shuttle on an automatic loom. TTD: 1-48

Jacquard loom. Blueprints of Jacquard loom, type R. Schubert & Salzer A-G. PB 33152 (1932-38). *Bibl. Sci. Ind. Reports 4,* 8 (Jan. 3, 1947); 935 pp.; price $6.00 (Microfilm); $93.50 (Enlargement prints).

This report consists of detail and assembly drawings for the loom. Many of the drawings which are stamped obsolete are superseded by other drawings contained in the report. TTD: 1-48

Loom. Blueprints of curtain loom. Schubert & Salzer A-G. PB 33167 (1925-39). *Bibl. Sci. Ind. Reports 4,* 9 (Jan. 3, 1947); 1151 pp.; price $6.00 (Microfilm); $115.00 (Enlargement prints).

The above 2 reports consist of detail and assembly drawings for the loom. Some of the drawings, marked obsolete, have been superseded by new drawings, which are included. TTD: 1-48

Narrow fabric looms. Some developments in machinery for woven smallwares. W. Holt. *J. Textile Inst. 38,* P381-9 (Aug. 1947); *Textile Mfr. 73,* 303 (July, 1947).

A review of developments on high speed looms and shuttleless looms for weaving narrow fabrics. Some of the high speed looms, as Hattersley and Sauer, are briefly described. TTD: 1-48

Threading loom shuttles. J. Lupton. Brit. P. 583 917. *Textile Mfr. 73,* 387 (Aug. 1947).

A threading device for a shuttle is so constructed that it may be inserted in a well in the shuttle and secured by a pin. TTD: 1-48

Loom shuttle guard. T. Leeming. Brit. P. 584 221. *Textile Mfr. 73,* 388-9 (Aug. 1947).

A loom shuttle guard which is raised and lowered during the forward and backward movement of the slay consists of 3 rods clamped between brackets. The top rod, shorter than the other 2, passes through guides, attached to the front of the slay cap, and is free to rise and fall. TTD: 1-48

Narrow fabric loom. Wm. Holt (½ to J. & N. Philips & Co., Ltd.). Can. P. 444 103, Sept. 9, 1947.

See USP 2 416 098, Feb. 18, 1947 (TTD: *4,* 164). TTD: 1-48

Loom. Sterling W. Alderfer (½ to Edw. D. Andrews). Can. P. 444 307, Sept. 23, 1947.

See USP 2 356 964, Aug. 29, 1944 (TTD: *1,* No. 4, 10). TTD: 1-48

Control devices IV 2 b

Reversing mechanism. Improved reversing mechanism for jacquards. Anon. *Fibres 8,* 242-3 (July, 1947).

To reverse the card cylinder on a jacquard loom, the cylinder must be free from the points of the needles. A new mechanism which makes it impossible to reverse the cylinder if it is not in a safe position to be reversed is described. TTD: 1-48

Warp let-off. Wool yarn weaving, with particular reference to controlling of warp tension. E. J. Poole. *J. Textile Inst. 38,* P286-99 (Aug. 1947).

A brief review of weaving mechanisms, from the time of the hand loom, is given, with particular attention to control of the warp from the beam. Positive or controlled let-off mechanisms of today are described and illustrated. The speed of the beam driving of these mechanisms is dependent on the tension of the warp. TTD: 1-48

Weaving. Blueprints of St-Standardmachine; blueprints of card-punching machine, type JRS. Schubert & Salzer A-G. PB 33146 (Jan. 1941). *Bibl. Sci. Ind. Reports 4,* 8 (Jan. 3, 1947); 117 pp.; price $2.50 (Microfilm); $17.50 (Enlargement prints).

This report consists of a number of detail drawings for the machines, some of which are stamped obsolete. TTD: 1-48

Picker stick check straps. Harold J. Johnson (to Gates Rubber Co.). USP 2 426 353, Aug. 26, 1947.

This device consists of a group of V-type belts supported on snubber pins below the shuttle box. These are arranged in such a way that the picker stick on the return stroke picks up one belt then another then another. This gives a constantly increasing retarding force as the stick approaches the end of its stroke.
SPH TTD: 1-48

Shuttle thread trap. Wilfrid J. Gosselin (to U. S. Bobbin & Shuttle Co.). USP 2 426 449, Aug. 26, 1947.

A shuttle eye of novel design has thread passages arranged in such a way that the thread is trapped in position so that it cannot unthread except under most unusual and unlikely conditions. The device is to be used on shuttles of the automatic or self-threading type.
SPH TTD: 1-48

Stop motion. R. E. Bridge. Brit. P. 583 016. *Textile Mfr. 73,* 340 (July, 1947).

A modification of Brit. P. 566 816 (TTD: *2,* 380). If a shed is not formed perfectly during weaving, such as by the breaking of a single warp thread, the stop motion is actuated. TTD: 1-48

Tensioning selvedge warp. W. H. Barker (to Blackburn Loom & Weaving Machinery Making Co., Ltd.). Brit. P. 583 588. *Textile Mfr. 73,* 342 (July, 1947).

By means of a braking device for the selvedge bobbins on looms on which the selvedge warps are not supplied from the warp beam, pressure, exerted through bands

on the flanges of the bobbins is decreased as yarn is unwound. TTD: 1-48

Stop motion. Kenneth B. McCaleb (to United Merchants & Mfrs., Inc.). Can. P. 443 993, Sept. 2, 1947.

See USP 2 361 145, Oct. 24, 1944 (TTD: *1,* No. 6, 8). TTD: 1-48

Stop motion. Victor M. J. Ancet (to Marius (Marcel) Fayolle). Can. P. 444 105, Sept. 9, 1947.

The breaking of a weft thread actuates a stop motion on a circular loom through a sensing finger that periodically engages the inside of the shed in front of the shuttle location. TTD: 1-48

Fabric contruction — IV 2 c

Cloth take-up. Sewing eliminated by new-type cloth take-up. Anon. *Textile World 97,* No. 9, 292 (Sept. 1947).

A cloth take-up device, located below the floor level and driven by the chain and sprocket on the take-up roll, eliminates the sewing of 100- to 200-yd. pieces. TTD: 1-48

Knitting — IV 3

Warp knitting. High speed warp knitting. T. H. A. Llewellyn, F.N.F., Ltd. *J. Textile Inst. 38,* P390-405; *Textile Mfr. 73,* 348 (Aug. 1947).

A brief survey of the history of knitting is given. Details of the design of needles, double eccentric movements, yarn tension bars, and let-offs for warp knitting machines and limitations to higher speeds are discussed. A discussion of fibers which may be warp knitted and their processing is also noted. TTD: 1-48

Knitting machines — IV 3 a

Hosiery machine. New full-fashioned hose machine. Anon. *Fibres 8,* 97-8 (Mar. 1947).

An automatic full-fashioned fine gage hosiery machine, the Bentley-Cotton, is described. The hosiery produced is knitted non-stop from welt to toe. TTD: 1-48

Knitting. Blueprints of cap machines, type FZ and JM; and simplified spinning machine, type VSM. Schubert & Salzer A-G. PB 33149 (Jan. 1943). *Bibl. Sci. Ind. Reports 4,* 8 (Jan. 3, 1947); 498 pp.; price $5.75 (Microfilm); $50.00 (Enlargement prints).

This report consists of detail and assembly drawings and parts lists for the machines used for knitting berets, and for a simplified spinning machine. Some of the de-

tail drawings are stamped obsolete. The report includes correspondence between the firm and customers in foreign countries, with suggestions for improving the machines. There are brief descriptions in French, with German translations, of several French knitting machines. These machines are illustrated. Data tables with results of metallurgical tests of several of the parts of the VSM machine are included. TTD: 1-48

Knitting machine. The singlehead-single unit machine. L. Jellig & Aug. Christensen. *Tids. Textilteknik 5,* 45-8 (May-June, 1947); *in Danish.*

This special cotton machine, designed by Wildman Mfg. Co., is described in detail. Its qualities, compared with those of other types of knitting machines, are discussed, especially with reference to the operation. TTD: 1-48

Knitting machine. Robert Reiner auto-heeler. L. Jellig & Aug. Christensen. *Tids. Textilteknik 5,* 67-70 (July-Aug. 1947); *in Danish.*

The auto-heeler is presented in a detailed description, together with photographs and diagrams. TTD: 1-48

Knitting machine. Blueprints of heel machine with movable auxiliary needles, type F. Schubert & Salzer. PB 33148 (Sept. 1942). *Bibl. Sci. Ind. Reports 4,* 8 (Jan. 3, 1947); 184 pp.; price $2.75 (Microfilm); $18.50 (Enlargement prints).

This report consists of detail and assembly drawings for the machine, some of which are stamped obsolete. TTD: 1-48

Textile machines. Blueprints of machines. Schubert & Salzer A-G. PB 33146, 33186, 33464 & 33488. *Bibl. Sci. Ind. Reports 4, 7* (Jan. 3, 1947).

The following microfilm reels represent detail and assembly drawings, together with illustrated parts lists, for a number of carding, stretching, and knitting machines, manufactured by Schubert and Salzer, for the production of caps, curtains, stockings, etc. In some cases, data tables and operation instructions are included, the majority of which are in German, while others are in French, English and Italian. TTD: 1-48

Knitting machine. Blueprints of circular knitting machine, type KR. Schubert & Salzer A-G. PB 33157 (1926-36). *Bibl. Sci. Ind. Reports 4,* 8 (Jan. 3, 1947); 201 pp.; price $3.00 (Microfilm); $20.00 (Enlargement prints).

This report consists of detail and assembly drawings and an illustrated manufacturers' parts list for this knitting machine. Data tables are included. TTD: 1-48

Knitting machine. Blueprints of circular knitting frame, type RW. Schubert & Salzer A-G. PB 33158 (1919-1935). *Bibl. Sci. Ind. Reports 4,* 8 (Jan. 3, 1947); 1399 pp.; price $6.00 (Microfilm); $140.00 (Enlargement prints).

This report consists of detail and assembly drawings, and an illustrated manufacturers' parts list for this knitting frame. A number of drawings, stamped obsolete, have been superseded by new drawings which are contained in the report. Data tables and operating instructions in German are included. Some instructions are in French and English. TTD: 1-48

Knitting machine. Blueprints of Jacquard circular knitting machine, type JR. Schubert & Salzer A-G. PB 33159 (1934-1939). *Bibl. Sci. Ind. Reports 4,* 8 (Jan. 3, 1947); 979 pp.; price $6.00 (Microfilm); $98.00 (Enlargement prints).

This report consists of detail and assembly drawings, and an illustrated manufacturers' parts list for the machine. Some drawings, stamped obsolete, have been superseded by others contained in the report. Data tables are included. TTD: 1-48

Knitting machine. Blueprints of Jacquard circular knitting machine, type JR. Schubert & Salzer A-G. PB 33160 (1927-1939). *Bibl. Sci. Ind. Reports 4,* 8 (Jan. 3, 1947); 337 pp.; price $4.25 (Microfilm); $34.00 (Enlargement prints).

This report consists of detail and assembly drawings, and operating instructions for the Jacquard machine. Some of the drawings, stamped obsolete, have been superseded by new drawings contained in the reports. Data tables are included. TTD: 1-48

Circular raising gig. Blueprints of circular raising gig, type RU. Schubert & Salzer A-G. PB 33161 (Dec. 1934). *Bibl. Sci. Ind. Reports 4,* 8 (Jan. 3, 1947); 194 pp.; price $2.75 (Microfilm); $19.50 (Enlargement prints).

This report consists of detail and assembly drawings for the circular gig. Many of the drawings are marked obsolete. Data tables are included. TTD: 1-48

Knitting machine. Blueprints of mesh-wheel-knitting-frame, type MW. Schubert & Salzer A-G. PB 33169-71. *Bibl. Sci. Ind. Reports 4,* 9 (Jan. 3, 1947).

The above 3 reports consist chiefly of detail and assembly drawings for the knitting frame. Some of the drawings, marked obsolete, have been superseded by new drawings which are included. There are a number of photographs of the frame. Attachments for filigree and for knitting hosiery are described and illustrated. TTD: 1-48

Knitting machine. Blueprints of flat (bar) ribbing machine, type R. Schubert & Salzer A-G. PB

33174-76. *Bibl. Sci. Ind. Reports 4,* 9 (Jan. 3, 1947).

The above 3 reports consist of detail and assembly drawings, and an illustrated manufacturers' parts list for this machine, which features transposed purl with running stitches, single and double movable needles, and gear shift, with belt or Renold chain. Some of the drawings, which are stamped obsolete, have been superseded by new drawings which are contained in the reports. Data tables are included. TTD: 1-48

Knitting machine. Blueprints of circular knitting machines, type CA-Corona-machine. PB 33184-6. *Bibl. Sci. Ind. Reports 4,* 9 (Jan. 3, 1947).

The above 3 reports consist of detail and assembly drawings, and an illustrated manufacturers' parts list for the CA circular knitting machine. Some of the drawings stamped obsolete, have been superseded by new drawings contained in the reports. Thread guard, clock, and imitation seam devices, as well as attachments for sport hosiery and various heel designs, are described and illustrated. Data tables are included. TTD: 1-48

Knitting machine. Blueprints of knitting frame for stockings, type KL, KCU, CN, KBI. Schubert & Salzer A-G. PB 33464 (Feb. 1946). *Bibl. Sci. Ind. Reports 4,* 9 (Jan. 3, 1947); 1080 pp.; price $6.00 (Microfilm); $108.00 (Enlargement prints).

This report consists of detail and assembly drawings for the stocking frames. Some of the drawings, stamped obsolete, have been superseded by new drawings which are contained in the report. Data tables are included. TTD: 1-48

Knitting machine. Blueprints of knitting frame for stockings, type R. Schubert & Salzer A-G. PB 33465 (1924-32). *Bibl. Sci. Ind. Reports 4,* 9 (Jan. 3, 1947); 1191 pp.; price $6.00 (Microfilm); $119.00 (Enlargement prints).

This report consists of detail and assembly drawings, illustrated manufacturers' parts list and setting-up instructions for the stocking frame. Some of the drawings, stamped obsolete, have been superseded by new drawings which are contained in the report. Data tables are included. TTD: 1-48

Knitting machine. Blueprints of knitting frame for stockings, type JPDI. Schubert & Salzer A-G. PB 33466 (Feb. 1946). *Bibl. Sci. Ind. Reports 4,* 9 (Jan. 3, 1947); 266 pp.; price $3.50 (Microfilm); $27.00 (Enlargement prints).

This report consists of detail and assembly drawings for the frame. Some of the drawings, stamped obsolete, have been superseded by new drawings, which are contained in the report. Data tables are included. TTD: 1-48

Knitting machine. Blueprints of knitting frame for stockings, type WN II, WN II U, and O. Schubert & Salzer A-G. PB 33467 (1941-3). *Bibl. Sci. Ind. Reports 4,* 9 (Jan. 3, 1947); 637 pp.; price $6.00 (Microfilm); $64.00 (Enlargement prints).

This report consists of detail and assembly drawings and a manufacturers' parts list for the stocking frames. TTD: 1-48

Knitting machine. Blueprints of knitting frame for stockings, type FZS. Schubert & Salzer A-G. PB 33468 (1927-34). *Bibl. Sci. Ind. Reports 4,* 9 (Jan. 3, 1947); 281 pp.; price $3.75 (Microfilm); $28.50 (Enlargement prints).

This report consists of detail and assembly drawings and an illustrated manufacturers' parts list for the FZS stocking frame. TTD: 1-48

Knitting machine. Blueprints of knitting frame for stockings, type FW. Schubert & Salzer A-G. PB 33469 (1926-33). *Bibl. Sci. Ind. Reports 4,* 9 (Jan. 3, 1947); 988 pp.; price $6.00 (Microfilm); $99.00 (Enlargement prints).

This report consists of detail and assembly drawings for the FW stocking frame. TTD: 1-48

Knitting machine. Blueprints of knitting frame for stockings, type KE, SV, SP. Schubert & Salzer A-G. PB 33470 (Feb. 1946). *Bibl. Sci. Ind. Reports 4,* 9 (Jan. 3, 1947); 677 pp.; price $6.00 (Microfilm); $68.00 (Enlargement prints).

This report consists of detail and assembly drawings, and an illustrated manufacturers' parts list for KE, SV, and SP II stocking frames. Data tables are included. TTD: 1-48

Knitting machine. Blueprints of knitting frame for stockings, types NKS, and NK. Schubert & Salzer A-G. PB 33471 (July, 1940). *Bibl. Sci. Ind. Reports 4,* 10 (Jan. 3, 1947); 630 pp.; price $6.00 (Microfilm); $63.00 (Enlargement prints).

This report consists of detail and assembly drawings, and an illustrated manufacturers' parts list for the NK and NKS stocking frame. Data tables are included. TTD: 1-48

Knitting machine. Blueprints of knitting frame for stockings, type EL. Schubert & Salzer A-G. PB 33472 (Nov. 1937). *Bibl. Sci. Ind. Reports 4,* 10 (Jan. 3, 1947); 1063 pp.; price $6.00 (Microfilm); $106.50 (Enlargement prints).

This report consists of detail and assembly drawings for the EL stocking frame. Data tables are included.
TTD: 1-48

Knitting machine. Blueprints of knitting frames for stockings, types RK, RW, JM, FK, and SJ. Schubert & Salzer A-G. PB 33473 (1923-25). *Bibl. Sci. Ind. Reports 4,* 10 (Jan. 3, 1947); 1118 pp.; price $6.00 (Microfilm); $112.00 (Enlargement prints).

This report consists of detail and assembly drawings and an illustrated manufacturers' parts list for these stocking frames. Data tables are included.
TTD: 1-48

Knitting machine. Blueprints of knitting frame for stockings, type WA. Schubert & Salzer A-G. PB 33474 (1925-34). *Bibl. Sci. Ind. Reports 4,* 10 (Jan. 3, 1947); 1197 pp.; price $6.00 (Microfilm); $120.00 (Enlargement prints).

This report consists of detail and assembly drawings and an illustrated manufacturers' parts list for the WA stocking frame. Some of the drawings, stamped obsolete, have been superseded by new drawings, which are contained in the report. Data tables are included.
TTD: 1-48

Knitting machine. Blueprints of knitting frame for stockings, types KU and NR. Schubert & Salzer A-G. PB 33475 (Feb. 1946). *Bibl. Sci. Ind. Reports 4,* 10 (Jan. 3, 1947); 750 pp.; price $6.00 (Microfilm); $75.00 (Enlargement prints).

This report consists of detail and assembly drawings, and an illustrated manufacturers' parts list for the KU and NR stocking frames. TTD: 1-48

Knitting machine. Blueprints of knitting frame for stockings, types DWS, SW. Schubert & Salzer A-G. PB 33476 (1931-32). *Bibl. Sci. Ind. Reports 4,* 10 (Jan. 3, 1947); 1153 pp.; price $6.00 (Microfilm); $115.50 (Enlargement prints).

This report consists of detail and assembly drawings, operating instructions, and an illustrated manufacturers' parts list, for the SW and DWS stocking frames. Several knitting operation drawings, prepared by Scott & Williams, and data tables are included. TTD: 1-48

Knitting machine. Blueprints for knitting frame for stockings, type MJ. Schubert & Salzer A-G. PB 33477 (Feb. 1932). *Bibl. Sci. Ind. Reports 4,* 10 (Jan. 3, 1947); 523 pp.; price $6.00 (Microfilm); $52.50 (Enlargement prints).

This report consists of detail and assembly drawings and an illustrated manufacturers' parts list for the MJ stocking frame. TTD: 1-48

Knitting machine. Blueprints of knitting frames for stockings, types RM and FZ. Schubert & Salzer A-G. PB 33478 (1920-5). *Bibl. Sci. Ind. Reports 4,* 10 (Jan. 3, 1947); 1481 pp.; price $6.00 (Microfilm); $148.50 (Enlargement prints).

This report consists of detail and assembly drawings, and an illustrated manufacturers' parts list, for the RM and FZ. TTD: 1-48

Knitting machine. Blueprints of knitting frame for stockings, types JR, CAE, FS, SC. Schubert & Salzer A-G. PB 33479 (1924-32). *Bibl. Sci. Ind. Reports 4,* 10 (Jan. 3, 1947); 342 pp.; price $4.25 (Microfilm); $34.50 (Enlargement prints).

This report consists of detail and assembly drawings, and an illustrated manufacturers' parts list for these stocking frames. Some of the drawings, stamped obsolete, have been superseded by new drawings, which are contained in the report. TTD: 1-48

Knitting machine. Blueprints of knitting frame for stockings, types KUS, EK. Schubert & Salzer A-G. PB 33480 (Feb. 1946). *Bibl. Sci. Ind. Reports 4,* 10 (Jan. 3, 1947); 544 pp.; $6.00 (Microfilm); $54.50 (Enlargement prints).

This report consists of detail and assembly drawings, and an illustrated manufacturers' parts list for the KUS and EK stocking frames. TTD: 1-48

Knitting machine. Blueprints of knitting frame for stockings, type KSU. Schubert & Salzer A-G. PB 33481-33484. *Bibl. Sci. Ind. Reports 4,* 10 (Jan. 3, 1947).

The above 4 reports consist of detail and assembly drawings and an illustrated manufacturers' parts list for the KSU stocking frame. Some of the drawings, stamped obsolete, have been superseded by new drawings which are contained in the report. Data tables are included.
TTD: 1-48

Knitting machine. Blueprints of knitting frame for stockings, type WN. Schubert & Salzer A-G. PB 33485-33486 (1934-41). *Bibl. Sci. Ind. Reports 4,* 10 (Jan. 3, 1947); 1025 pp.; price $6.00 (Microfilm); $102.50 (Enlargement prints).

The above 2 reports consist of detail and assembly drawings for the WN stocking frame. Data tables are included. TTD: 1-48

Knitting machine. Blueprints of knitting frame for stockings, type JPD and JPDK. Schubert & Salzer A-G. PB 33488 (Feb. 1946). *Bibl. Sci. Ind. Reports 4,* 10 (Jan. 3, 1947); 679 pp.; price $6.00 (Microfilm); $121.50 (Enlargement prints).

The above 2 reports consist of detail and assembly draw-

ings, illustrated manufacturers' parts list, and operating instructions for the JPD and JPDK stocking frames. Some of the drawings, stamped obsolete, have been superseded by new drawings, which are contained in the report. Data tables and an operational chart, in Italian, are included. TTD: 1-48

Wrap spindle. Oscar Fregeolle (to Hemphill Co.). USP 2 426 010, Aug. 19, 1947.

A mechanism for a circular, independent needle type of knitting machine produces wrap patterns in consecutive courses by reciprocatory knitting. This involves timing the device so that the same wrap yarn will be presented to the same needle or needles at the 2 respective wrapping points.
SPH TTD: 1-48

Knitting machine. John E. Lynam (to Wm. Cotton, Ltd.). USP 2 426 036, Aug. 19, 1947.

The cam for operating certain parts of a straight-bar knitting machine, that is in common use, is a rotary cam with a spring-loaded follower. By this invention a positive-motion cam is provided consisting of the main cam and a return, or counter, cam. This device eliminates the wide variation of torque on the cam drive shaft as well as other objectionable features.
SPH TTD: 1-48

Circular knitting machine. E. C. Harris (to G. Blackburn & Sons, Ltd.). Brit. P. 583 337. *Textile Mfr. 73,* 341 (July, 1947).

On a circular knitting machine needle tricks are formed in the needle cylinder by radially disposed strips inserted in grooves cut in the cylinder, the grooves being wide enough to accommodate 2 strips with a spacing piece of the same depth as that of the groove between them.
TTD: 1-48

Knitting machine. A. Shortland (to Mellor Bromley & Co., Ltd.). Brit. P. 583 929. *Textile Mfr. 73,* 387 (Aug. 1947).

In the construction of tricked beds in knitting machines, metal inserts are formed on the portions projecting from grooves in the trick bed. TTD: 1-48

Circular knitting machine. H. Chell, E. N. Jolliffe & E. Chesterton. Brit. P. 584 052. *Textile Mfr. 73,* 388 (Aug. 1947).

The needle cylinder on a circular knitting machine may be adjusted up and down so as to vary the length of the loops (*i. e.,* to permit slackening or stiffening).
TTD: 1-48

Circular knitting machine. Paul L. Thurston (to Interwoven Stocking Co.). Can. P. 443 959, Sept. 2, 1947.

An improved method of needle selection and tranfer is provided on a circular knitting machine to produce links-and-links and also rib knitting, other than 1 × 1 rib.
TTD: 1-48

Knitting machine. Norman H. Smith (to Hemphill Co.). Can. P. 444 073, Sept. 9, 1947.

See USP 2 408 698, Oct. 1, 1946 (TTD: *3,* 549).
TTD: 1-48

Circular knitting machine. Benj. F. Coile (to Fidelity Machine Co., Inc.). Can. P. 444 254, Sept. 23, 1947.

See USP 2 399 002, Apr. 23, 1946 (TTD: *3,* 281).
TTD: 1-48

Knitting machine. Paul W. Bristow (to Scott & Williams, Inc.). Can. P. 444 295, Sept. 23, 1947.

See USP 2 365 801, Dec. 26, 1944 (TTD: *2,* 62).
TTD: 1-48

Welt turning. Friedrich M. Wachtler (to Alfred Hofmann, Inc.). Can. P. 444 354, Sept. 30, 1947.

On a flat knitting machine having a welt turning mechanism, a fabric take-up attachment is automatically actuated to move simultaneously with the movement of the welt bar in the direction toward the needles.
TTD: 1-48

Forming welts. Alfred Hofmann & Friedrich M. Wachtler (to Alfred Hofmann, Inc.). Can. P. 444 355, Sept. 30, 1947.

See USP 2 363 000, Nov. 21, 1944 (TTD: *1,* No. 6, 5).
TTD: 1-48

Knitting machine. Paul Schmidt (to Textile Machine Works). Can. P. 444 368, Sept. 30, 1947.

See USP 2 357 361, Sept. 5, 1944 (TTD: *1,* No. 4, 7).
TTD: 1-48

Control devices — IV 3 b

Control device. Neversnarl Control Unit. Anon. *Fibres 8,* 268 (Aug. 1947).

An illustrated description of a control unit that eliminates whipping and snarling of high twisted yarns as they are drawn from the bobbin and thus eliminates imperfections in knitting. TTD: 1-48

Imperfections in knitted fabrics. Geo. E. Henning (to Western Electric Co., Inc.). USP 2 427 406, Sept. 16, 1947.

An improved detector for locating imperfections in knitted fabrics comprises a tubular member having a number of resilient fingers that rest on the fabric on a covered

conductor passing through the knitting head. When an imperfection is detected a stop motion is actuated to stop the machine. TTD: 1-48

Warp stop motion. Van Raalte Co., Inc. Brit. P. 583 132. *Textile Mfr. 73,* 340 (July, 1947).

A stop motion, particularly suitable for tricot knitting machines, is actuated through a pair of electrodes when touched by a faulty thread, which is rendered electrically conductive by being wetted with a liquid upon contact with one of the electrodes which is kept wet. TTD: 1-48

Knitting machine. Textile Machine Works. Brit. P. 583 231. *Textile Mfr. 73,* 341 (July, 1947).

On a full-fashioned knitting machine an automatic racking mechanism provides for manipulating the end stop spindles and comb operating spindles so as to secure an automatic widening or narrowing of the fabric. TTD: 1-48

Resilient stop motion. J. C. Laurie (to P. Scott & Co., Ltd.). Brit. P. 584 042. *Textile Mfr. 73,* 387 (Aug. 1947).

Instead of a rigid stop device, a resilient, floating stop motion is provided to arrest the motion of the reciprocating parts on straight bar knitting machines. This braking device is in the form of a piston operating in a pneumatic cylinder. TTD: 1-48

Knitting machine stop motion. Van Raalte Co., Inc. Brit. P. 584 139. *Textile Mfr. 73,* 388 (Aug. 1947).

A stop motion on a knitting machine is actuated, through electro-sensitive means, by breakage of a yarn, to which an electrolyte is applied as it is fed into the machine. TTD: 1-48

Knitting machine picking motion. Ernest Brooksby & Frederick E. Deans (to Bentley Eng. Co., Ltd.). Can. P. 444 148, Sept. 16, 1947.

See USP 2 396 490, Mar. 12, 1946 (TTD: *3,* 231). TTD: 1-48

Fabric construction — IV 3 c

Knitting compensator. Tension control in knitting seamless hose. J. Procter, Courtaulds, Ltd. *J. Textile Inst. 38,* P406-10 (Aug. 1947); *Textile Mfr. 73,* 345-6 (Aug. 1947).

The knitting compensator, which is the subject of Brit. P. 523 580, in the name of Courtaulds, Ltd., and F. Wholton, is described and illustrated. Results of a test of this device, in comparison with the cymbal tension device and the spring-loaded gate-type tension device, show that the compensator is quite efficient. This is confirmed by the prolonged use of the compensator on a small commercial scale. The compensator can be used on any continuously running winding process and is very effective with nylon. TTD: 1-48

Knitting designs. Spiral designs versatile in circular knitting. Karel Rehak. *Textile World 97,* No. 9, 165, 167, 236, 239-40, 244, 248, 252, 254, 257-8 (Sept. 1947).

A study of the relationship between the number of needles and the pattern wheel of circular knitting machines (*e. g.,* interlocked, jacquard, loom-wheel of the tricot type, and circular tie machines) is presented and illustrated with pattern diagrams. Three equations given to express the pattern area relation are applicable to any of these circular knitting machines, wherein the pattern wheel does not divide the number of needles without a remainder. TTD: 1-48

Circular knitting machine. Hemphill Co. Brit. P. 583 018. *Textile Mfr. 73,* 340 (July, 1947).

On a circular knitting machine a shogging mechanism for the dial comprises a releasable connection for the dial that drives a gear of the driving connection between the drive shaft and the cross shaft. TTD: 1-48

Knitted fabric. Jos. A. Krasnov & Max M. Kuller (to Sure-Fit Products Co.). Can. P. 444 089, Sept. 9, 1947.

A contour-conforming knitted fabric comprises a preponderance of courses of loops of inelastic thread and a series of separate courses of loops of elastic thread, the elastic loops tending to contract the fabric wale-wise and course-wise. TTD: 1-48

Hosiery. Ferdinand Loeffler (to Robt. Reiner, Inc.). Can. P. 444 293, Sept. 23, 1947.

A full-fashioned stocking blank is knitted as a continous unitary fabric, with the heel portion having progressively widened selvedges gradually merging into the selvedges of the leg and of the foot. TTD: 1-48

Special fabrics — IV 4

Hair net. Henry F. Goldsmith. USP 2 428 071, Sept. 30, 1947.

Hair nets are formed on automatic machines capable of making net fabrics from thermosetting or thermoplastic synthetic resin yarns. The net fabric is placed upon a mold having the contour of a hair net in use, and is heated to fuse the synthetic plastic threads together and to fix the material into the same contour as the mold. TTD: 1-48

Tape. Stoomibondfabriek. Brit. P. 583 461. *Textile Mfr. 73,* 342 (July, 1947).

A woven tape is cut transversely and the 2 ends are folded in one operation parallel to the cut, the folding being effected by pressing each end into a slot in a work table, such that a U-shaped fold is produced.

TTD: 1-48

Tape belt. Wm. J. Elvin & Geo. L. McLuckie (to Camille Dreyfus). Can. P. 444 381, Sept. 30, 1947.

Belts for use on ring twisting frames comprise fabric tape woven of stretched yarns having a basis of a cellulose ester, the lapped ends of which have been reduced in thickness by a saponification treatment. TTD: 1-48

CARPET ANNUAL. Edited by H. F. Tysser. Brit. Continental Trade Press; price £ 1.

Reviewed in *Fibres 8,* 269 (Aug. 1947). TTD: 1-48

Fabric processing IV 5

Stentering. Stentering of cloth for printing. Colourist. *Textile Mfr. 73,* 322-4 (July, 1947).

Stentering fabrics for printing is discussed, with details of setting the fabric to a predetermined width, weft straightening, and preparation in special solutions given.

TTD: 1-48

Fabric cutter. Brit. Celanese, Ltd. Brit. P. 584 116. *Textile Mfr. 73,* 388 (Aug. 1947).

Apparatus for cutting fabrics having a base of thermoplastic material comprises a blade that can be heated to a predetermined degree and means for adjusting the angle at which the cutting edge enters the fabric.

TTD: 1-48

Fabric applications IV 6

Coated fabric. New research work to improve capacity of certain textile fibers to adhere to rubber. Bächle. PB 38883 (June, 1944). *Bibl. Sci. Ind. Reports 4,* 19 (Jan. 3, 1947); 11 pp.; price $1.00 (Microfilm or Photostat).

The fabric is impregnated in the cold with a diluted mixture of latex of about 8 to 15% total dry content, of which 10 parts are rubber and 4 parts are casein or haemoglobin. After drying, the fabric is kneaded and subsequently covered with a solution of a rubber mixture in benzol-gasoline. TTD: 1-48

Flare cloth. Development of aircraft pyrotechnics flare cloth. R. W. Harris. PB 46934 (Oct. 1945). *Bibl. Sci. Ind. Reports 4,* 22 (Jan. 3, 1947); 11 pp.; price $1.00 (Microfilm or Photostat).

Investigation was begun in January, 1938 on possible substitutes for silk in the manufacture of parachutes for pyrotechnic ammunition. Results of this development to date are given in this report. Characteristics of currently approved types of flare cloth are listed.

TTD: 1-48

Laminates. Laminates. G. S. Learmonth. *Fibres 8,* 147-51, 196-99, 244-6, 259-63 (May-Aug. 1947).

The manufacture of laminates is described with some details of impregnation, drying, pressing, molding, etc. Phenolic, urea, melamine, and other resins used in laminates are reviewed. Papers and fibers that are used as fillers in laminating are discussed, and various decorative and industrial applications given. TTD: 1-48

Plastic fabrics. Dyer's notes. Anon. *Dyer 97,* 423-4 (Apr. 25, 1947).

A brief review of coated glass fabrics, vinylidene chloride (Saran) fabrics, and zein fibers. Their properties, uses, and future developments are discussed.

TTD: 1-48

Tire fabrics. Tire fabrics. G. S. Dolby. *Fibres 8,* 183-8 (June, 1947).

A tire cover is composed of wire beads which hold the cover on the rim, cord casing, and tread. Different types of tire cords and their extensibility are reviewed with some details of fabric construction of the cover given. Various causes of cover failure are described.

TTD: 1-48

Tough material. Vulcanized fiber for machine parts. Gerald A. Albert. *Machine Design 19,* No. 11, 109-12 (Nov. 1947).

Vulcanized fiber, made by treating a chemically reactive cotton paper with zinc chloride, is a tough, horn-like organic material. It is useful in the textile field for facing wooden shuttles and as heads for bobbins.

TTD: 1-48

Tubular fabric cover. Norman A. Mack (to Roberts & Porter, Inc.). USP 2 426 401, Aug. 26, 1947.

This invention covers the construction of a fabric or other absorbent tubular jacket for lithographic rolls, and also the mechanical device for installing said jacket on the roll. The mechanism consists of a thin tubular mandrel for holding the jacket in place and a jack-like mechanism for pushing the roller through the mandrel into the jacket.

SPH TTD: 1-48

Cementing felts. John Roslund (to Asten-Hill Mfg. Co.). USP 2 428 097, Sept. 30, 1947.

Seams are formed between the ends of drier felts by means of a cement strip prepared by applying to a strip of mesh a solid water- and heat-resistant cement such as cellulose acetate which may be softened during for-

mation of the seam by a volatile solvent. Permanent openings are incorporated in the cement strip to provide recurrent cement-free absorbent areas throughout the seam fo the passage of moisture. TTD: 1-48

Rubber reinforced cord fabric. Matthew W. Wilson (to B. F. Goodrich Co.). Can. P. 444 264, Sept. 23, 1947.

Preparatory to incorporation in a rubber-like material, a cord fabric, composed of a number of cords spaced apart, is treated with an adhesive liquid by immersion in a tank containing the liquid, removing any excess liquid by beating the fabric and then drying. The cords of the weftless cord fabric have a uniformly thin coating of a solid adhesive. TTD: 1-48

CHEMICAL RAW MATERIALS V

Detergents. Chemistry and application of detergents. J. A. Hill, Brit. Laundries' Research Assn. *Dyer 97,* 360 (Apr. 11, 1947).

Synthetic detergents must wet a fabric thoroughly, must remove oil and other soiling matter and must keep it in suspension. Anion-active, cation-active, and non-ionic detergents are discussed as to their advantages and disadvantages. TTD: 1-48

Emulsions and dispersions. Recent developments in emulsions and dispersions. J. R. F. Jackson. *Dyer 97,* 357-8 (Apr. 11, 1947).

A discussion of developments of emulsions of oils or waxes in water and aqueous dispersions of synthetic resins. Anionic, cationic, and non-ionic agents are also briefly reviewed. TTD: 1-48

Resistant coating. Robt. C. Swain & Pierrepont Adams (to Am. Cyanamid Co.). USP 2 426 379, Aug. 26, 1947.

A melamine-formaldehyde resin is prepared from one mol of melamine with 6 mols of formalin. The condensation product from this reaction is alkylated with an alcohol such as butanol, and the product blended with cellulose acetate to form a compound which will produce a water- and acid-resistant coating. Films produced from this material are less soluble than films of cellulose acetate alone, and this is an advantage in the treatment of textiles. The product may be used in mixtures with urea-formaldehyde resins, phenol-formaldehyde resins, ethyl cellulose, nitro-cellulose and other substances. A wide variety of plasticizers may also be incorporated with it. Various fillers, pigments, dyes, and lakes may also be added. TTD: 1-48

Bonding polyvinyl compounds. Wm. F. O. Pollett (to W. T. Henley's Telegraph Works Co., Ltd.). USP 2 426 413, Aug. 26, 1947.

An insulated electric conductor is made by applying a

polyvinyl compound to a metallic wire and wetting the surface of this insulating covering with a paste consisting of an ungelled dispersion of powered polyvinyl chloride in a nonvolatile plasticizing liquid. A textile covering is then applied to the wetted surface and the covered conductor is heated to a temperature above the gelling point of the paste. This bonds the textile material to the polyvinyl compound. A suitable paste may be made by dissolving 1 part by weight of polyvinyl chloride in 30 parts of tricresyl phosphate at 110°C, cooling to about 40°C, and stirring in more polyvinyl chloride up to about 18 parts. TTD: 1-48

Elastic thread. Sterling W. Alderfer. USP 2 427 334, Sept. 16, 1947.

A lightly tensioned thread is made by depositing a layer of rubber upon a layer of plastic backing material which, when stretched, will reach its maximum elongation at a point where the rubber portion of the composite material has reached the tension which has been found to give the desired stretch to the finished thread. The composite sheet is then cut into ribbons which are twisted and covered with a textile material. Water-soluble backings such as polyvinyl alcohol and its derivatives are preferred, since they are readily destroyed in the finishing bath. When a water-soluble backing is used with a water dispersion of rubber, the backing is protected by means of an interposed layer of a water- resistant adhesive which will adhere to both the backing layer and the rubber. Insoluble backing such as nylon or one of the polyvinyl chlorides may also be used. TTD: 1-48

Elastic filaments. Carbide & Carbon Chemicals Corp. Brit. P. 584 437. *Textile Mfr. 73,* 389 (Aug. 1947).

In a process for making elastic vinyl resin filaments, produced by copolymerizing a vinyl halide (80-95%) with a vinyl ester of a lower aliphatic acid, MW being at least 15,000, an elasticizer is applied for the resin consisting of an alkyl dicarboxylate having 2 or more C atoms between the ester carboxyl radicals, an alkyl or aryl phosphate, or a polyglycol di-ester of a carboxylic acid. From 20 to 110 wt.% of the elasticizer is fixed on the material, which may then be scoured to remove any excess elasticizer. TTD: 1-48

Rubber coating. Raymond C. Briant (to Firestone Tire & Rubber Co.). Can. P. 444 066, Sept. 9, 1947.

A dry, non-tacky coating for a textile fabric consists of a chlorinated rubber, a chlorinated hydrochlorinated rubber, and a very small amount of tetraethylene pentamine. TTD: 1-48

Cellulose derivative. John G. Wiliams (to Henry Dreyfus). Can. P. 444 209, Sept. 16, 1947.

See USP 2 418 211, Apr. 1, 1947 (TTD: *4*, 178).
TTD: 1-48

MACROMOLÉCULES. I. PHYSIQUE ET STRUCTURE DES PLASTIQUES. P. Piganiol. (Collection Matiéraux de Synthèse). Dunod, 92, Rue Bonaparte, Paris VI e.; price 760 f.

Reviewed in *Engineering 164,* 483 (Nov. 21, 1947).
TTD: 1-48

TECHNOLOGICAL AND PHYSICAL INVESTIGATIONS ON NATURAL AND SYNTHETIC RUBBERS. A. J. Wildschut. Elsevier Publishing Co., Inc. Amsterdam, 1946; 173 pp.; price $3.00.

Reviewed in *Textile Research J. 17,* 449-50 (Aug. 1947). TTD: 1-48

CHEMICAL PROCESSING VI

Dry cleaning solvents. Cleaning safely with synthetic solvents. Lillian Gordon. *Safety Eng. 94,* No. 5, 56-9 (Nov. 1947).

Hazards due to the use of solvents in dry cleaning and the precautions necessary in handling these materials are discussed. More complete information on this subject may be obtained from a booklet prepared by the Safety Research Institute, New York. TTD: 1-48

Dyeing and finishing. Ladies' hose—dyeing and finishing processes. A. J. Hall. *Fibres 8,* 60-3, 77-8, 113-14 (Feb.-Apr. 1947).

Preparatory measures for dyeing, dyeing machines and processes, and finishing methods, as delustering and drying, for ladies' hosiery are discussed. A review of finishing machinery is also given. TTD: 1-48

Finishing. Textile finishing in Germany. R. G. Fargher. *Dyer 97,* 503-4 (May 23, 1947).

A survey on dyeing silk and Perlon, automatic machines in jig dyeing, and a slack washing machine. TTD: 1-48

Resin finishing. Acrylic resins in textile finishing. Hans Fischer, AB Bofors Nobelkrut. *Textil och Konfektion 4,* 204-5 (May, 1947); *in Swedish.*

A brief review on the manufacture of acrylic resins with different properties. Three finishes are presented: Bonosol, Bonotex and Bonogel (AB Borfors Nobelkrut) delivered respectively as solution, emulsion, and alkali salt. The achievements of the 3 different kinds of finish are discussed. TTD: 1-48

Textile finishes. Reaction of tetrachlorophthalic anhydride with cellulose derivatives. Wm. P. Utermohlen, Jr. & E. Louise Wallace, Inst. Textile Technology. *J. Polymer Sci. 2,* 275-80 (June, 1947).

Products from the reaction of 3, 4, 5, 6 tetrachlorophthalic anhydride (TCPA) with cellulose should be useful as textile finishes because of their potential mildew- and water-resistant properties. The reaction of TCPA with cellulose diacetate and with cellulose diethyl ether in diozane solution was found to give esters with very low tetraphthalyl contents which were more limited in solubility than the corresponding esters produced from phthalic anhydride. Phthalic anhydride was found to be more reactive with these cellulose derivatives than was TCPA, especially when pyridine was used as the solvent. Acylations could not be carried out with TCPA in the presence of pyridine because pyridine decomposes TCPA. TTD: 1-48

Wet-treating textiles. Ceramic-lined tank, especially for wet treatment of textiles. Strehle & Thiel (to Keramchemie-Berggarten). Ger. P. 715 755 (Jan. 6, 1942). *Bibl. Sci. Ind. Reports 4,* 73 (Jan. 3, 1947); 3 pp.

The distributor in the middle of the tank consists of vertically arranged ceramic rings, which are separated from each other by studs. TTD: 1-48

Wool finishes. Modern finishes for wool. Anon. *Dyer 97,* 514 (May 23, 1947).

The International Wool Secretariat exhibition of finishes for wool as Lanide and various shrinkproofing processes is briefly reviewed. TTD: 1-48

Treating skins. Paul Poser. USP 2 426 372, Aug. 26, 1947.

Furs, skins, and textile materials are washed, bleached, dyed, waterproofed and dried by stacking in a chamber in which a reagent is propelled from edge to edge of the material in the stack, and the stack subjected to a periodic pressure in a direction transverse to the direction of flow of the reagent. The chamber may be provided with a resilient internal bed and pistons arranged opposite the bed for squeezing, releasing, and flexing different parts of the materials so that the reagent will flow intimately into its texture. An apparatus is described. TTD: 1-48

Processing rope. John A. Eriksson & Frants V. Jensen (to Jensen Specialties, Inc.). USP 2 426 493, Aug. 26, 1947.

The rope is submerged by passing it around drums within a bath of the treating compound or solution. These drums are readily removable from the bath for the purpose of applying rope to them. On leaving the bath, the rope is passed through a wringer mechanism in which the pressure can be adjusted. It is then passed around drums on which it is dried. These drums vary in diameter from one end to the other to compensate for the shrinkage of the rope during drying. Infrared

lamps may be arranged so that their rays are directed onto the rope traveling over the drying drums.
TTD: 1-48

ACTION OF ALKALI UPON CELLULOSE (Textile Series Report No. 33, Office of QMG). Albert Schaeffer. Office of Publication Board, U. S. Dept. of Commerce; Apr. 1947; 94 pp. TTD: 1-48

COLOR VII

CONTROL OF FACTORS INFLUENCING SHADE IN SOME MILLS MANUFACTURING 20-OZ. OLIVE DRAB SUITING AND 32-OZ. OLIVE DRAB OVERCOATING (Textile Series Report No. 28, Office of QMG). L. DaCosta Ward. Office of Publication Board, U. S. Dept. of Commerce; Oct. 1946; 23 pp.
TTD: 1-48

Dyeing VII 2

Direct dyeing. Dyeing properties of direct colors. G. G. Bradshaw. *Dyer 97,* 255, 257, 259, 323, 325 (Feb. 28, Mar. 14, 28, 1947).

Methods of applying direct dyes should vary, depending on the dye used and considering such factors as absorption of the dye on the surface of the fiber, rate at which equilibrium is reached, amount of salt in the dye bath, temperature, depth of shade, and liquor ratio. Tests are described showing the effects of these factors on final dyeing properties. A method of determining the time of half dyeing is also given. The levelling power and "strike" of dyes are discussed in relation to their application in dyeing.
CCJ TTD: 1-48

Dyeing. Dyeing process uses molten metal. Anon. *Textile World 97,* No. 9, 133, 222, 226 (Sept. 1947).

In a German development, reported by the Office of Technical Services, U. S. Dept. of Commerce, a molten metal bath is employed for heat treating in dyeing and printing. Controllable temperatures up to 212°F can be readily obtained. Formulas are given.
LCL TTD: 1-48

Dyeing. Dyers, finishers, and technical colleges. H. A. Thomas, Courtaulds, Ltd. *Dyer 97,* 505-6 (May 23, 1947).

A lecture on protein and synthetic fibers and dyeing and finishing rayon. TTD: 1-48

Dyeing and finishing. Wool dyeing and finishing machinery. Anon. *Dyer 97,* 507 (May 23, 1947).

A brief summary of developments in wool dyeing and finishing machinery. TTD: 1-48

Dyeing and printing. Dyeing and printing nylon. E. B. Abbot & G. Douglas. *Dyer 97,* 425, 427 (Apr. 25, 1947).

Factors in dyeing and printing nylon are discussed in a lecture. TTD: 1-48

Dyeing cotton. Cotton dyeing today. E. Yeadon. *Dyer 97,* 411-12 (Apr. 25, 1947).

A lecture on dyes for cotton materials, dyeing heavy cord, and various aspects of piece dyeing by the jig method. TTD: 1-48

Dyeing nylon. Dyeing of nylon with different dyes. S. Humlen. *Norsk Tekstiltidende 28,* 155-6 (Sept. 1947); *in Norwegian.*

A brief survey of recent results in dyeing nylon, with the use of ordinary textile dyes. TTD: 1-48

Dyeing rayon cakes. New machine for dyeing of viscose rayon cakes. C. M. Whittaker. *J. Textile Inst. 38,* P273-8 (Aug. 1947); *Dyer 97,* 554 (June 6, 1947).

An illustrated description of a machine for dyeing rayon cakes or other packages, which have as large an internal diameter as standard viscose rayon cakes. Details of operation are given. This new machine is economical and easy to operate, dyes in less time than pressure machines, and requires simpler pipe and valve arrangements. TTD: 1-48

Dyeing wool. Chrome colors in wool dyeing. Geo. L. Royer, Henry E. Millson & Chester A. Amick. *Dyer 97,* 609-10 (June 20, 1947).

A discussion of the effect of wool variations on the dyeing of wool. Chrome dyeing processes are reviewed and the effect that the epidermis of wool has on dye penetration described. TTD: 1-48

Anthraquinone dye. Ernst Gutzwiller (to Sandoz, Ltd.). USP 2 427 527, Sept. 16, 1947.

A new dye of the anthraquinone series has an excellent affinity for wool, silk, nylon, and other synthetic fibers containing N, and can be dyed from a neutral bath into fast reddish-blue shades. TTD: 1-48

Dyeing cellulose acetate. Brit. Celanese, Ltd. Brit. P. 583 349. *Textile Mfr. 73,* 341 (July, 1947).

Cellulose acetate material may be dyed in shades of good fastness to washing and rubbing by impregnating with a dye solution containing a thiocyanate, as a swelling agent, and a lower alcohol, containing up to 5 C atoms.
TTD: 1-48

Dyeing and printing. Durand & Huguenin, A-G. Brit. P. 583 413. *Textile Mfr. 73,* 341 (July, 1947).

A dyeing or printing preparation consists of a salt of an acid polybasic acid ester of an enolic reduction product of a cyclic polyketone that yields a water-insoluble dye upon acid oxidation, a water-soluble organic onium compound, and an organic acid amide. TTD: 1-48

Dyeing nylon. Durand & Huguenin, A-G. Brit. P. 583 795. *Textile Mfr. 73,* 387 (Aug. 1947).

In a process for dyeing nylon fibers with gallocyanine dyes the material is dyed in leuco form from an alkaline vat and the dyeing is developed in a bath containing a chromate and an acid, and then soaped. TTD: 1-48

Printing VII 3

Printing emulsions. New emulsions developed for textile printing. Anon. *Textile World 97,* No. 9, 143, 230, 234, 236 (Sept. 1947).

Water-in-oil type emulsions, recently developed, for printing azo, chrome, and direct colors simplify printshop problems. The preparation of emulsions is described in some detail. TTD: 1-48

Printing staple fiber. Soc. of Chem. Industry in Basle. Brit. P. 583 115. *Textile Mfr. 73,* 340 (July, 1947).

In printing regenerated cellulose staple fiber, an ester salt of a vat dye is applied to the fiber in conjunction with a chlorate, as an oxidizing agent, and with an oxidation catalyst, the color being developed by steaming. An oxidation catalyst is used which causes a slower oxidation of the ester than does ammonium vanadate. TTD: 1-48

Measurement and defects VII 4

Dyeing and finishing. Problems in wool dyeing and finishing. F. F. Elsworth, Wool Industries Research Assn. *Dyer 97,* 297 (Mar. 28, 1947).

Defects in wool yarns and piece goods are often due to treatments prior to dyeing and finishing. These faults may arise from mixing wools of different quality, counts, or twists; may be caused by oil or metal stains; may be due to chemical processing in predyeing treatments; or may be due to microbiological actions. TTD: 1-48

Light diffraction. Diffraction of light by cellulose acetate yarn. E. V. Martin, Kodak Research Laboratories. *Textile Research J. 17,* 512-14 (Sept. 1947).

Cellulose acetate yarns, when immersed in decahydronaphthalene and illuminated with parallel rays of white light, appear colored by transmitted light when viewed at an angle to the fiber axis from a point in the plane containing the fiber axis. A discussion of this diffraction and the experiments on it are given. TTD: 1-48

PROOFING VIII

Mildew-resistance. Mildew-resistance of organic materials (textiles, leather, etc.). General specification of methods for determination of. (General specifications for inspection of material, Appendix IX.) USN Dept. June 5, 1945. PB 48479 *Bibl. Sci. Ind. Reports 4,* 3 (Jan. 3, 1947); 7 pp.; price: $1.00 (Microfilm or Photostat).

This specification contains detailed test procedure for use in examining textile materials for the property of mildew resistance. It covers equipment required and procedures for preparation of inoculum and of test specimens, evaluation of the mildew growths by a qualitative test based on visual inspection and a quantitative test based upon the loss in breaking strength sustained as a result of mildew attack. Procedures are also given for aging tests to measure the permanence of the fungicidal treatment. These methods, with modifications, have been used for evaluation mildew resistance of leather, fiber, rubber, resins, cork and paper products. TTD: 1-48

Shrinkproofing wool. Unshrinkable wool produced by alcoholic alkali. M. Lipson. *J. Textile Inst. 38,* P279-85 (Aug. 1947); *Dyer 97,* 553-4 (June 6, 1947).

Wool treated with an alcoholic solution of caustic potash and then neutralized in a solution of H_2SO_4 shows a 68% longer wearing life. Properties of the treated wool and a discussion of the nature of the reaction are given. TTD: 1-48

Fireproofing fabrics. Clarence B. White. USP 2 427 997, Sept. 23, 1947.

In order to render a textile fabric fire resistant, it is first impregnated with a solution of sodium carbonate, dried and impregnated with antimony trichloride in an organic solvent. The presence of the sodium carbonate prevents any attack on the fabric from HCL resulting from hydrolysis of the antimony trichloride. The fabric is then dried, passed through a warm solution of sodium carbonate to precipitate the insoluble antimony trioxide, and is finally passed through a solution of chlorinated paraffin and dried. TTD: 1-48

Shrinkproofing. J. G. Evans & J. Rogers (to Imperial Chemical Industries, Ltd.). Brit. P. 583 428. *Textile Mfr. 73,* 341-2 (July, 1947).

An increased resistance to shrinkage is imparted to cellulosic fabrics by impregnating them with a solution of an etherified melamine-formaldehyde condensation product, the fabric being then heated to produce a water-insoluble resin. In an example, to a neutral solution containing 10 wt.% of an etherified melamine-formaldehyde

condensation product, is added 1% (calculated on the condensation product) of ammonium dihydrogen phosphate and formaldehyde (in the form of a 40% solution). A cotton fabric is steeped in this, squeezed, stentered, dried at 60°C and heated for 5 min. at 150°C. TTD: 1-48

Flameproofing. L. A. Jordon & L. A. O'Neill. Brit. P. 583 811. *Textile Mfr. 73,* 387 (Aug. 1947).

In rendering textiles flame-resistant, the material is impregnated with a solution of the water-soluble salts of Fe and Sb, which are precipitated as oxides by an alkaline solution. TTD: 1-48

Moistureproofing composition. M. F. Monbiot. Brit. P. 584 142. *Textile Mfr. 73,* 388 (Aug. 1947).

A moistureproofing composition, in the form of a hot melt, comprises ethyl cellulose, 10-35, a plasticizer, 20-28, a waxy moistureproofing agent, 16-28, and a resin, 12-52 wt.%. TTD: 1-48

Flameproofing. Geo. W. Seymour & Geo. C. Ward (to Camille Dreyfus). Can. P. 444 001-2, Sept. 2, 1947.

See USP 2 415 112-3, Feb. 4, 1947 (TTD: *4,* 126). TTD: 1-48

Treatment of Army Socks for Shrink Resistance by the Quartermaster Corps (Textile Series Report No. 46, Office of QMG). Anon. Prepared jointly by Harris Research Laboratories and Textile Research Laboratory of Research & Development Branch, Phila. QM Depot; Aug. 1947; 55 pp. TTD: 1-48

TESTING AND ANALYSIS IX

Cellulose spectrometric measurements. Absorption spectra in detection of chemical changes in cellulose and cellulose derivatives. John W. Rowen, Chas. M. Hunt & Earle K. Plyler. *J. Research Natl. Bur. Standards 39,* 133-40 (Aug. 1947); *Textile Research J. 17,* 504-11 (Sept. 1947).

Results of the measurements of ultraviolet and infrared absorption spectra of cellulose and some of its derivatives before and after chemical treatments are noted. The possibility of detecting and estimating groups as -OH, -HCO and -COOH by spectral absorption is indicated. TTD: 1-48

Fiber photography. Photography as applied to study of fibrous materials. J. L. Stoves. *Fibres 8,* 109-12 (Apr. 1947).

A review of the use of photography for the study of the structure, properties, and manipulation of fibrous materials is given. Apparatus for this study is briefly discussed. TTD: 1-48

Fiber photomicrography. Fiber photomicrography. Anon. *Fibres 8,* 318-19 (Sept. 1947).

The types of cameras, illumination, and photographic technique in fiber photomicrography are briefly discussed. TTD: 1-48

Fiber quality. Estimation of fiber quality. J. L. Spencer-Smith, Linen Industry Research Assn. *J. Textile Inst. 38,* P257-272 (Aug. 1947); *Textile Mfr. 73,* 299-300 (July, 1947).

Fiber quality is the specification of the fiber properties that determines yarn quality as denoted by its strength and levelness. A consideration of yarn properties and the relationship between yarn strength and fiber properties are discussed. Methods of estimating fiber quality are reviewed. The fundamental indices of fiber quality are intrinsic quality number, relative slope of spinning line, and levelness factor of the yarn. TTD: 1-48

Moistening of textiles. Testing moistening of different types of fabric. Peter Fink, Textile Research Inst. (Copenhagen). *Tids. Textilteknik 5,* 65-7 (July-Aug. 1947); *in Danish.*

A simple testing device consists of a glass funnel fixed into a rubber ring and placed upside down in a beaker filled with water. The sample to be tested is placed in the bulb of the funnel, and the time required until the sample has sunk down is measured. TTD: 1-48

Testing clothing. Effective insulation of Army Air Force clothing. A. P. Gagge. PB 46560 (July, 1942). *Bibl. Sci. Ind. Reports 4,* 22 (Jan. 3, 1947); 21 pp.; price $1.00 (Microfilm or Photostat).

This report presents a report on "The measurement of effective insulation on the human subject of current types of Air Force flying clothing" submitted on June 15, 1942, by the John B. Pierce Laboratory of Hygiene, New Haven, Conn. The report was prepared by Dr. C. E. A. Winslow and Dr. L. P. Herrington. The 4 types of Army flying clothing assemblies studied were: (a) summer, (b) winter, (c) Alaskan, and (d) electrically heated. The temperature range covered in the experiments was 45° to -9°F. Temperature ranges over which clothing assemblies with various degrees of insulation are effective are presented in the conclusions. A flying clothing assembly is considered effective only so long as the skin temperature in any area does not fall below its tolerable limit. For the trunk and areas of the extremities proximal to the body the limiting temperature for comfort is approximately 90°F and for tolerance to cold is approximately 80°F. For the extremities such as the hands and feet, limiting temperature for comfort is

65°F, and for tolerance to cold, 40°F. Factors affecting skin temperature are: the circulation of the blood; skin contour, *i. e.,* the relation of the cooling area to enclosed volume; insulation of the ambient clothing, and environmental conditions outside the clothing, such as air movement and temperature. For both the winter and Alaskan flying assemblies, the cooling of the extremities such as the hands and feet is the more important limiting factor at moderately cold temperatures such as 15°F, while the cooling of the trunk areas is a slightly more important factor, at extreme cold temperatures such as -30°F, in determining the period of tactical efficiency.

TTD: 1-48

Foreign matter in wool. Herbert J. Wollner (to Baird Associates, Inc.). USP 2 427 435, Sept. 16, 1947.

In order to determine the amounts of foreign matter buried in a mass of wool or other non-transparent material, the material is submerged in a liquid having the same index of refraction. Light is transmitted through the material to display the foreign matter, which is then compared with sets of graduated charts in the form of transparencies, each set depicting predetermined amounts of one kind of foreign matter and different sets depicting different kinds of foreign matter.

TTD: 1-48

Starch gels. Improved method for measurement of gel strength and data on starch gels. Walter J. Hamer. *J. Research Natl. Bur. Standards 39,* 29-37 (July, 1947).

A method is described for measuring gel strength which involves determining the shearing force required to fracture the gels by applying weight to standard disks immersed in the gel. This method was used in the study of starches of various types. Wheat starch, with the highest percentage of amylose, was found to have the highest gel strength, and waxy cornstarch, with the lowest percentage of amylose, to have the lowest gel strength. The gel strengths of rice and cassara starches differ, although they both have 17% of amylose. The lengths of the amylose chains of these 2 types of starches differ, To determine the effect of absorbed fats on gel strength, corn and wheat starches were defatted, and the defatted starches were found to have a higher gel strength than the natural starches. TTD: 1-48

Testing tire cords. Effect of alternate heating and cooling on breaking strength and elongation of cotton and rayon tire cords. Walter S. Lewis, Southern Regional Research Laboratory. *Textile Research J. 17,* 431-7 (Aug. 1947).

Procedures for testing mercerized cotton, unmercerized cotton and rayon tire cords for breaking strength and elongation in the oven-dry state and after conditioning are discussed. The mercerized cotton showed the greatest resistance to change in the tenacity tests. Greater losses in elongation on heating and cooling were shown by the rayons. TTD: 1-48

Textile standards. Proposal for uniform methods of testing textile goods. *Textil och Konfektion 4,* 238 (June, 1947); *in Swedish.*

The Standard Testing Committee of the branch organization of the Swedish textile industry published these proposals for standard methods of testing raw materials, yarns, and cloth. TTD: 1-48

Water-repellency determination. Dynamic absorption method for determining water-repellency. J. E. Simpson, Office QMG & Ruth M. Howorth, Natl. Assn. Dyers Cleaners. *Textile Research J. 17,* 497-503 (Sept. 1947).

A brief review of water-resistant test methods that test treated fabrics in an immobile position is given. The apparatus and procedure for the dynamic water-absorption method are described. This method is considered to be the most precise one that has been developed to date. TTD: 1-48

First Report of ASTM Task Group Studying Wyzenbeek Precision Wear Test Meter (Textile Series Report No. 45, Office of QMG). Seaman J. Tanenhaus & Gerald Winston, Phila. QM Depot. Office of Publication Board, U. S. Dept. of Commerce; 22 pp. TTD: 1-48

Investigation of Methods for Determining Filling Power of Feathers (Textile Series Report No. 32, Office of QMG). Norman B. Edelman, Phila. QM Depot. Office of Publication Board, U. S. Dept. of Commerce; Dec. 1946; 21 pp. TTD: 1-48

Micro-Climate in and about Tents (Textile Series Report No. 47 (Tent Research Report No. 4, Office of QMG)). Norman Sissenwine, OQMG. Office of Technical Services, U. S. Dept. of Commerce; Sept. 1947; 66 pp. TTD: 1-48

Relationship between Measurements of Air Permeability by Two Machines (Textile Series Report No. 35, Office of QMG). M. I. Landsberg & Gerald Winston. Office of Publication Board, U. S. Dept. of Commerce; 18 pp. TTD: 1-48

Testing of Yarns and Fabrics with Special Reference to Viscose Rayon. N. Eyre. Emmott & Co., Ltd.; price 2s 6d.

Reviewed in *Fibres 8,* 218 (July, 1947). TTD: 1-48

USE OF ACCEPTANCE TESTING DATA TO SUBSTANTIATE SPECIFICATION REQUIREMENTS (Textile Series Report No. 34, Office of QMG). Stanley Backer, Phila. QM Depot. Office of Publication Board, U. S. Dept. of Commerce; May, 1947; 17 pp.
TTD: 1-48

TEXTILE MILLS X

Air-conditioned hosiery mill. Modern hosiery mill controls its air. H. B. LeFeaux, Vanette Hosiery Mills. *Textile World 97,* No. 9, 129-31 (Sept. 1947).

An air-conditioning installation at Vanette Hosiery Mills (Dallas, Tex.) is illustrated and briefly described.
TTD: 1-48

Boilers. Notes by dyehouse engineer. Anon. *Dyer 97,* 370-1 (Apr. 11, 1947).

A review of some engineering problems in the dyeing and printing industries.
TTD: 1-48

Boiler defects. Supplementary boiler inspections. Edw. Ingham. *Dyer 97,* 577, 579, 581, 583 (June 6, 1947).

Bulges or distortions, blisters, cracks and fractures, grooving, channeling and corrosion are boiler defects that are reviewed. The importance of boiler inspections is stressed.
TTD: 1-48

Boilers. Steam boiler feed. C. F. Wade. *Dyer 97,* 478-9 (May 9, 1947).

Steam boilers may be fed by a feed pump or an injector. These 2 means of feeding are briefly reviewed.

Clamp. New "all-angle" clamp. Anon. *Textile Mfr. 73,* 321 (July, 1947).

A brief description of a new clamp for holding a sewing machine head at any angle during maintenance.
TTD: 1-48

Coal handling. Coal silo increases boiler-room efficiency. E. Dalton White. *Textile World 97,* No. 9, 139, 141 (Sept. 1947).

A silo for handling coal (with a capacity of 384 tons) is in operation at Dixie Mercerizing Co. Mechanical handling from coal car to stoker has increased efficiency appreciably.
TTD: 1-48

Color code. Color codes in industry. S. A. Wood, I. C. I., Ltd. *Dyer 97,* 298 (Mar. 28, 1947).

A brief note on a safety color code for painting equipment and appliances in mills to improve working conditions.
TTD: 1-48

Cottonless cotton mill. Let's look at the cottonless cotton mill. Anon. *Textile World 97,* No. 9, 147, 149 (Sept. 1947).

Developments at Gray Mills, Inc., are briefly discussed. Varied blends of viscose, acetate, wool, nylon, Aralac, and ramie are produced in rebuilt conventional cotton-system machines.
TTD: 1-48

Floor maintenance. Mechanized floor maintenance saves money at Macon Textiles. D. W. Barnes, Macon Textiles, Inc. *Textile World 97,* No. 9, 151, 153 (Sept. 1947).

Costs of floor maintenance were reduced one-quarter at Macon Textiles by use of mechanized equipment (Tennant system).
TTD: 1-48

Machinery. Machinery developments. Anon. *Fibres 8,* 133 (Apr. 1947).

Brief notes on a bale opener, for cotton or any other type of fiber, and a sample loom for trying out samples of new design.
TTD: 1-48

Machinery. Machinery developments. Anon. *Fibres 8,* 242 (July, 1947).

Notes on a beam dyeing machine, a device for reducing waste on ring frames, and a new loom which reduces noise and has a new system of picking are given.
TTD: 1-48

Machinery maintenance. Notes by dyehouse engineer. Anon. *Dyer 97,* 575 (June 6, 1947).

The renewal of machine parts and the arrangement of flues in boiler installations to avoid gas explosions are discussed. The disadvantages of sharp bends in pipes carrying pumped liquids, are also reviewed.
TTD: 1-48

Mill construction. Notes by dyehouse engineer. Anon. *Dyer 97,* 475 (May 9, 1947).

Brief discussion on "Aluminex" roof, window, and door glazing.
TTD: 1-48

Mills. Rationalization of the textile industry. J. T. Reinholds. *Norsk Tekstiltidende 28,* 171 (Oct. 1947); *in Norwegian.*

A brief survey of the principles involved in rationalizing the work in a textile mill of medium size.
TTD: 1-48

New machinery. Pirn winder: loom swell: yarn drying. Anon. *Fibres 8,* 208 (June, 1947).

Brief notes on a new pirn winder (Weston (Engineers) Ltd.), loom swell (Super Shuttle Control, Ltd.), and a yarn drying machine (Petrie & McNaught, Ltd.).
TTD: 1-48

New machinery. New Pegg machines. Anon. *Dyer 97,* 613-15 (June 20, 1947).

Brief notes on an all-metal dyeing machine, a dyeing machine for knitted fabrics, a washing machine for silk fabrics, and a sample dyeing machine for nylon hose are given. TTD: 1-48

Steam. Some uses of steam in textile industry. Anon. *Fibres 8,* 55, 58 (Feb. 1947).

A brief review of the utilization of steam in creping and stentering yarns, cloth and yarn dyeing, and other textile applications. TTD: 1-48

Steam economy. Steam economies in wool dyeing and finishing. Anon. *Dyer 97,* 453-5, 513-14 (May 9, 23, 1947).

Methods of conserving fuel in wool dyeing and finishing without affecting the quality of work produced are discussed. TTD: 1-48

Steam trap. Steam trapping by ball labyrinth system. Anon. *Dyer 97,* 477-8 (May, 1947).

The ball labyrinth system of steam trapping effectively drains all condensate and does not allow live or flash steam to escape. There are no levers, buckets or floats. TTD: 1-48

Tachometer. A. T. hand tachometer. Anon. *Fibres 8,* 318 (Sept. 1947).

An illustrated description of a hand tachometer that is useful for checking speeds of shafts in inaccessible or unlighted positions. TTD: 1-48

Waste dye liquors. Dyer's notes. Anon. *Dyer 97,* 317, 319, 321 (Mar. 28, 1947).

Purification of waste dye liquors and sludge removal are reviewed. TTD: 1-48

Weaving production. Production measurement and P.M.H. in weaving sheds. IV. I. Laird. *Textile Mfr. 73,* 313-17 (July, 1947).

An analysis of the adverse factors which affect P.M.H. in weaving. TTD: 1-48

Woolen and worsted mills. Three new plants for woolen and worsted. Anon. *Textile World 97,* No. 8, 224 (Aug. 1947).

Three new spinning, weaving, and finishing plants of Deering-Milliken, erected in South Carolina, are noted. TTD: 1-48

BASIC SCIENCES XI

Bacteria cultures. Bacteria culture collection. Herbert W. Reuszer. PB 40552, Oct. 1945. *Bibl. Sci. Ind. Reports 4,* 3 (Jan. 3, 1947); 14 pp.; price: $1.00 (Microfilm or Photostat).

The Nucleus of the Bacteria Culture collection (located at the Alabama Agricultural Expt. Station) consists of bacteria cultures which were isolated during field studies made by Dr. H. W. Reuszer on the deterioration of cotton textiles in the Panama Canal Zone. Other bacteria cultures isolated by Quartermaster laboratories from materials returned from tropical areas have been added to the collection. At present, the collection consists of about 1328 cultures. This report considers the laboratory work on the purification and identification of the organisms isolated during the Panama field studies together with preliminary observations on the isolations made by Quartermaster laboratories. The report deals first with the cellulose-decomposing bacteria and then with the remaining organisms which form a rather heterogeneous group. Only a few organisms have as yet been specifically identified. Bibliography. This report covers work performed under the auspices of the Tropical Deterioration Administrative Committee of the Office of Scientific Research and Development. (Contract OEMsr-1484). TTD: 1-48

Cellulose acetate. Optical behavior of cellulose acetates. Moll. PB 27809 (Feb. 1928). *Bibl. Sci. Ind. Reports 4,* 23 (Jan. 3, 1947); 3 pp.; price $1.00 (Microfilm); $1.50 (Enlargement prints).

Ramie fibers were acetylated in glacial AcOH and Ac_2O with addition of potassium acetate at 150°C. Up to 40% acetyl, the character of the ramie is only slightly changed; the fiber remains strongly positive in its birefringence. If the rayon is swollen with alcohol, there is weak swelling without change of the birefringence. Chlorinated hydrocarbons have a stronger swelling effect, and the birefringence disappears. The optical properties of cross-sections depend on their shapes. Diagrams of the cross-sections are included. TTD: 1-48

Cellulose fibers. Course of acetylation and deacetylation reactions of cellulose fibers. I. Optical and swelling properties. D. Vermaas & P. H. Hermans; II. X-ray diagrams. D. Vermaas, P. H. Hermans, & A. Weidinger, Algemeene Kunstzijde Unie & Affiliated Companies. *J. Polymer Sci. 2,* 397-411 (Aug. 1947).

A review of the preparation, birefringence, and swelling capacity of homogeneous acetylation and deacetylation of swollen cellulose model filaments under conditions in which the filament form is intact. X-ray patterns of these filaments are discussed. TTD: 1-48

Cellulose hydrolysis. Hydrolysis of native versus regenerated cellulose structures. O. A. Battista &

S. Coppick, Am. Viscose Corp. *Textile Research J. 17,* 419-22 (Aug. 1947).

Experiments to determine the hydrolytic accessibility of native and regenerated celluloses, using milder conditions of hydrolysis than are usually used, are described. Results show that the accessibility of a native cellulose, as cotton linters, is increased substantially by the process of solution and regeneration without degradation.
TTD: 1-48

Cellulose structure. Cellulose studies. IX. Molecular structure of cellulose and starch. Eugene Pacsu, Textile Foundation & Princeton Univ. *Textile Research J. 17,* 405-18 (Aug. 1947).

The proofs of Freudenberg supporting the present structure of cellulose are critically reviewed. Results of experiments for the proposed structure of cellulose show that cellulose contains about 0.3% of covalent acid-sensitive bonds. Evidence for the "principles of periodicity" in the cellulose structure is described. This concept of cellulosic structure is discussed with relation to starch and a proposed structure given. TTD: 1-48

Cotton linters. Struture of cotton linters. Chas. W. Hock, Hercules Powder Co. *Textile Research J. 17,* 423-30 (Aug. 1947).

In general, cotton linters fibers are darker, shorter, more cylindrical, and have thicker walls and narrower central canals than staple cotton fibers. The thin primary wall of linters fibers consists of waxy and pectic material while the thick secondary wall consists of layers of either all cellulose or cellulosic and non-cellulosic materials. These layers are subdivided into fibrils. TTD: 1-48

Dye diffusion. Anisotropic diffusion of direct dyes in fibers. A. Frey Wyssling, Eidgenössische Technische Hochschule. *J. Polymer Sci. 2,* 314-17 (June, 1947).

In dyeing cellulosic fibers with direct benzidine dyes from colloid solutions, the dyes are not only absorbed by the fibers but also diffused within the fiber. The molecules of the dyes are transported by convection along the fiber surface, and there is a lateral diffusion perpendicular, not parallel, to the fiber axis.
TTD: 1-48

Light absorption. Mercer lecture. E. J. Bowen. *Dyer 97,* 610 (June 20, 1947).

A lecture on the chemical theories of the absorption of light. The theory of wave-mechanics in relation to light absorption is discussed. TTD: 1-48

Pectin chemistry. Advances in pectin chemistry. I. Rudolph Speiser, Ohio State Univ. *J. Polymer Sci. 2,* 281-9 (June, 1947).

Recent work on the constitution and structure of pectin, the characterization of pectin, and the acid dissociation of pectinic acids is reviewed. TTD: 1-48

Polyamides. Multi-ingredient polyamides. W. E. Catlin, E. P. Czerwin & R. H. Wiley, E. I. duPont de Nemours & Co. *J. Polymer Sci. 2,* 412-19 (Aug. 1947).

The results of a study of polymeric amides based on more than one diamine or dibasic acid used in balanced proportions to give polymers of high molecular weight are reviewed. Physical properties, such as stiffness, tensile strength, softening point, etc., are discussed.
TTD: 1-48

Rayon saponification. Acetate rayon fiber properties as affected by saponification. A. J. Hall. *Fibres 8,* 270-3, 307-9 (Aug., Sept. 1947).

By saponification of acetate rayon with inorganic and organic alkalis, it can be made much stronger, its dyeing properties can be favorably modified, static electricity is reduced, and the safe ironing temperature for the fabrics is raised. Saponification also influences the reactivity of acetate rayon to numerous agents in finishing.
TTD: 1-48

Viscous elasticity. New theory of non-linear viscous elasticity. Harris Burte & Geo. Halsey, Textile Foundation & Princeton Univ. *Textile Research J. 17,* 465-76 (Sept. 1947).

A discussion of non-linear viscous elasticity for materials of 2 or more components is given. A new theory of non-linear viscous elasticity is derived and several examples are calculated. TTD: 1-48

Water-vapor diffusion. Diffusion of water vapor through high polymeric membranes. A. E. Korvezee & E. A. J. Mol, N. V. Pope's Metaaldraadlampenfabriek. *J. Polymer Sci. 2,* 371-80 (Aug. 1947).

The various aspects of water and water-vapor permeability of organic membranes (as cellulose acetate, polyethylene, polyvinyl chloride, etc.) are discussed. Absolute impermeability to water vapor of organic membranes cannot be found, because of their long-chain molecular structure or loose network and because of these molecules being in constant thermal agitation. TTD: 1-48

Absorbent cellulose. David M. Musser (to Pacific Mills). USP 2 426 561, Aug. 26, 1947.

The rate of absorbency and drying of cellulosic materials is increased permanently by treating the material under steam pressure, at a temperature above the boiling point of water, with a water-soluble alkyl phosphate or an alkyl alkali metal phosphate such as tributyl phosphate and Na

butyl phosphate in an alkaline aqueous solution. The reaction, expressed in terms of the etherification of the cellulose, is not carried beyond a degree of substitution in the cellulose mol of 0.1 or less. The product is insoluble in water or alkalis. The theory is advanced that the ability of the cellulose to take up and give off water in a given time is enhanced by the modification of the structure. TTD: 1-48

ADVANCES IN PROTEIN CHEMISTRY. III. Edited by M. L. Anson & John T. Edsall. Academic Press Inc., New York, 1947; 524 pp.; price $7.50.

Reviewed in *Textile Research J. 17,* 449 (Aug. 1947).

DÉRIVES CELLULOSIQUES (Cellulosic derivatives). G. Champetier. (Series *Materiaux de Synthèse.* Edited by Pierre Piganiol). Dunod, Paris; 1947; 275 pp.

Reviewed in *J. Polymer Sci. 2,* 353 (June, 1947). TTD: 1-48

TEXTILE RESEARCH XII

Applied textile research. New textile institute for applied research in Sweden. *Textil och Konfektion 4,* 206 (May, 1947); *in Swedish.*

In Norrkoping, a Swedish textile center, a new textile institute has been inaugurated. It is financed by several textile and ready-made clothing mills, and the research work has already started. TTD: 1-48

German firms. Preliminary reports list No. 584. BIOS. PB 48654 (Aug. 1946). *Bibl. Sci. Ind. Reports 4,* 22 (Jan. 3, 1947); 5 pp.

This consists of preliminary reports on 10 German firms engaged in the manufacture of woven felts and cloth and wool processing. Condition of target, person interviewed, and brief summary of target report are given. These are covered by BIOS reports nos. 8119-8128. Numbers of BIOS targets and T Force HQ reports are also given. TTD: 1-48

Indian textile industry. Mother India is rearing modern textile industry. Anon. *Textile World 97,* No. 9, 107-9 (Sept. 1947).

A very brief survey gives figures on India's present textile industry and proposed increases (2¾ million additional spindles and 75,000 more looms). TTD: 1-48

Indian textile industry. Report from India on textile-industry developments. J. K. Van Denburg, Jr., McGraw-Hill World News. *Textile World 97,* No. 9, 108-12, 270, 272, 275-6, 280, 284 (Sept. 1947).

The economics of India's textile industry are surveyed. It is pointed out that estimated potential consumption of cloth is 25 yds. per capita; actual production for 1947 was about 11 yds. per capita. TTD: 1-48

Italian textile industry. Italian textile industry. Anon. *Textil och Konfektion 4,* 254-6 (June, 1947); *in Swedish.*

Brief review of the re-establishment of the Italian textile industry since the war. TTD: 1-48

Laboratory. Guaranteed fabrics scheme. Anon. *Fibres 8,* 244-6 (July, 1947).

A brief discussion of the (Fothergill & Harvey, Ltd.) new research and development facilities. Research has produced a new glass fabric, a synthetic resin thread, etc. The firm has initiated a system of issuing a certificate of guarantee with each delivery of cloth. A section of the certificate gives data on the fabric's resistance to abrasion, color fastness, stability or elasticity, stitchability, thickness and quantity of filling, and other qualities, in addition to the normal weight, strength and construction details. The laboratory is equipped with apparatus for testing yarn abrasion, washability, water resistance, frictional strength, and chemical degradation. Many improvements in fabric qualities have already been made. TTD: 1-48

Textile developments. Recent development in textile manufacture. Wm. Dall. *Textil och Konfektion 4,* 312-18 (Aug. 1947); *in Swedish.*

A survey of the current situation in textile technology points out, that the established textile machinery manufacturers are pushing their research departments, while at the same time numerous machine builders in other fields, tooled up for vast wartime production, have been scrutinizing the textile situation for machines which they might build as part of their reconversion program. A revolution instead of a stepwise development in textile manufacture may be the consequence. TTD: 1-48

Textile research. International Wool Secretariat. Anon. *Textil och Konfektion 4,* 338 (Aug. 1947); *in Swedish.*

The setting up of a Swedish Advisory Committee of The International Wool Secretariat is announced. TTD: 1-48

Textile research. Possibilities for textile students in Great Britain. Leif Wilhelmsen & Erik Holm. *Norsk Tekstiltidende 28,* 139-40 (Aug. 1947); *in Norwegian.*

A survey of British textile education, including instructions for Scandinavians wanting to carry on textile studies in Great Britain. TTD: 1-48

[51]

Textile trends. Trends in textiles and clothing. Mary C. Whitlock, Bureau of Human Nutrition & Home Econ. *J. Home Econ. 39,* 403-4 (Sept. 1947).

Developments in new fibers and finishes and advances in textile research are briefly noted. Functionally designed clothing and standardization of garments are also discussed. TTD: 1-48

[52]

Wool research. Wool Industries Research Assn. Anon. *Fibres 8,* 300-1 (Sept. 1947).

A report on some of the outstanding features of developments in wool research in 1946. TTD: 1-48

Wool research. International Wool Secretariat. Review of a lecture delivered by R. G. Lund. *Norsk Tekstiltidende 28,* 141 (Aug. 1947); *in Norwegian.*

The organization, its origin, function and purposes are outlined. TTD: 1-48

Classification

This classification list is the basis for the arrangement of abstracts. Articles of general coverage are entered under the main classification. Papers which deal with a more limited and specific part of a subject are placed in an appropriate subclass. Where the original article treats two or more specific topics, the abstract is placed in a more general classification. As examples of this arrangement, the following are cited: An article comparing the properties of all organic fibers is placed under **"ORGANIC FIBERS I"** while another dealing specifically with protein fibers is placed under **"Protein fibers I 3 b."** If both protein and rayon fibers are mentioned, the abstract is entered in the next more general category, **"Artificial fibers I 3."**

I. **ORGANIC FIBERS** (physics, chemistry, manufacture)
   1. **Vegetable fibers** (cotton, flax, ramie, hemp, jute, sisal, etc.)
   2. **Animal fibers** (wool, silk, hair)
   3. **Artificial fibers** (derived from natural products)
      a. **Rayons** (cellulosic, viscose, cuprammonium)
      b. **Protein fibers**
   4. **Synthetic fibers** (made from synthetic high polymers)
   5. **Fiber applications** (not in yarns or fabrics)
   6. **Fiber processing** (oiling, etc.)

II. **INORGANIC FIBERS** (physics, chemistry, manufacture)

III. **FIBER TO YARN**
   1. **Fiber preparation** (opening, carding, drawing)
   2. **Blends**
   3. **Spinning** (including doubling and twisting)
   4. **Winding**
   5. **Yarn processing**
   6. **Yarn products** (thread, cordage, etc.)
   7. **Yarn applications** (not in fabrics)

IV. **YARN TO FABRIC**
   1. **Yarn preparation** (conditioning and warp sizing)
   2. **Weaving**
      a. **Looms**
      b. **Control devices** (stop motions, bobbin selectors, etc.)
      c. **Fabric construction**
   3. **Knitting**
      a. **Knitting machines**
      b. **Control devices**
      c. **Fabric construction**
   4. **Special fabrics** (pile, narrow, fancy)
   5. **Fabric processing** (tentering, drying, etc.)
   6. **Fabric applications**

V. **CHEMICAL RAW MATERIALS**
   1. **Plastics and elastomers**
   2. **Surface-active compounds**

VI. **CHEMICAL PROCESSING** (finishing, sizing, etc.)

VII. **COLOR**
   1. **Bleaching**
   2. **Dyeing**
   3. **Printing**
   4. **Measurement and defects**

VIII. **PROOFING** (water-, flame-, shrinkproofing, etc.)

IX. **TESTING AND ANALYSIS**
   1. **Physical properties**
   2. **Chemical analysis**

X. **TEXTILE MILLS**
   1. **Buildings, machinery, power**
   2. **Lighting and air**
   3. **Wastes**
   4. **Hazards; operations; efficiency**

XI. **BASIC SCIENCES**

XII. **TEXTILE RESEARCH**

Periodicals Currently Reviewed

(Abbreviations used in reference citations are indicated below titles.)

Acta Physicochimica USSR
Acta Physicochim.
Akademiet for de Tekniske Videnskaber
(See *Trans. Dan. Acad. Tech. Sci.*)
Alumni Bulletin, Rhode Island School of Design
Alumni Bull. R. I. School of Design
Ambassador
American Dyestuff Reporter
Am. Dyestuff Reptr.
American Journal of Physics
Am. J. Phys.
American Journal of Science
Am. J. Sci.
American Machinist
Am. Machinist
American Paper Converter
Am. Paper Converter
American Scientist
Am. Scientist
American Wool and Cotton Reporter
Am. Wool Cotton Reptr.
Analyst
Analytical Chemistry
Anal. Chemistry
Annalen der Chemie (Liebigs)
Ann. Chem. (Liebigs)
Annalen der Physik
Ann. Physik
Annales de chimie
Ann. chim.
Annales de physique
Ann. phys.
ASTM Bulletin
ASTM Bull.
Australian Official Journal of Patents, Trademarks and Designs
Bell Laboratories Record
Bell Labs. Record
Bell System Technical Journal
Bell System Tech. J.
Berichte der deutschen chemischen Gesellschaft
Ber.
Bibliography of Scientific and Industrial Reports
Bibl. Sci. Ind. Reports
Board of Trade Journal
Board of Trade J.
British Chemical Abstracts
Brit. Chem. Abs.
British Plastics
Brit. Plastics
Bulletin of the American Society of Swedish Engineers
Bull. Am. Soc. Swedish Engs.
Bulletin of the Institute of Paper Chemistry
Bull. Inst. Paper Chemistry
Bulletin of the Lowell Textile Institute
Bull. Lowell Textile Inst.
Bulletin de la Société chimique de France (Documentation and Memoires)
Bull. Soc. chim.
Bulletin of the Virginia Polytechnic Institute
Bull. Virginia Polytech. Inst.
Bulletin, Virginia Sections of the American Chemical Society
Bull. Virginia Sections ACS
Calco Technical Bulletin
Calco Tech. Bull.
Canadian Chemistry and Process Industries
Can. Chemistry & Process Industries
Canadian Journal of Research
Can. J. Research
Canadian Patent Office Record
Canadian Textile Journal
Can. Textile J.
Cellulosechemie
Cenco News Chats
Chemical Abstracts
Chem. Abs.
Chemical and Engineering News
Chem. Eng. News
Chemical Engineering
Chem. Eng.
Chemical Engineering Progress
Chem. Eng. Progress
Chemical Industries
Chem. Industries
Chemical Preview
Chem. Preview
Chemical Reviews
Chem. Rev.
(Die) Chemie
Chemie
(Die) Chemische Technik
Chem. Technik
Chemiker-Zeitung
Chem. Ztg.
Chemisches Zentralblatt
Chem. Zentr.
Chemist Analyst
Chemistry & Industry
Chemurgic Digest
Ciba Review
Ciba Rev.
Civil Engineering
Civil Eng.

Colorado Wool Grower and Marketer
Colorado Wool Grower
Comptes rendus hebdomadaires des seances de l'academie des sciences
Compt. rend.
Cord Age Magazine
Cord Age Mag.
Cotton (see *Textile Industries*)
Cotton (Manchester)
Cotton and Cotton Oil Press
Cotton & Cotton Oil Press
Cotton Trade Journal
Cotton Trade J.
Current Information
Daily News Record
DuPont Magazine
DuPont Mag.
Dyer, Textile Printer, Bleacher and Finisher
Dyer
Dyestuffs
Electrical Engineering
Elec. Eng.
Electrical World
Elec. World
Electronic Industries and Electronic Instrumentation
Electronics
Engineer
Engineering
Engineering Journal
Eng. J.
Engineering News-Record
Eng. News-Record
Fibre and Fabric
Fibre & Fabric
Fibres
Fibres, Fabrics & Cordage
Forschungen zur Geschichte der Optik
Forsch. Geschichte Optik
Fortune
Frontier
Gazzeta chimica italiana
Gazz. chim. ital.
General Electric Review
Gen. Elec. Rev.
Government Publications (Great Britain)
Govt. Publications (Great Britain)
Heating, Piping and Air Conditioning
Heating, Piping & Air Conditioning
Heating & Ventilating
Helvetica Chimica Acta
Helv. Chim. Acta
Hercules Chemist
India Rubber World
Indian Textile Journal
Indian Textile J.
Industrial and Engineering Chemistry, Industrial Edition
Ind. Eng. Chemistry
Industrial Arts Index
Ind. Arts Index
Industrial Bulletin of Arthur D. Little, Inc.
Ind. Bull. A. D. Little, Inc.
Industrial Standardization and Commercial Standards Monthly
Ind. Standardization
Industry & Power
Ingenieria (Mexico)
Ingenieria
Institute News
Inst. News
Instrumentation
Instruments
Interchemical Review
Interchem. Rev.
Journal and Proceedings of the Institution of Mechanical Engineers (London)
J. Proc. Institution Mech. Engs.
Journal of Agricultural Research
J. Agr. Research
Journal of Applied Mechanics
J. Applied Mechanics
Journal of Applied Physics
J. Applied Physics
Journal of Chemical Education
J. Chem. Education
Journal of Chemical Physics
J. Chem. Physics
Journal de chimie physique
J. chim. phys.
Journal of Colloid Science
J. Colloid Sci.
Journal of Engineering Education
J. Eng. Education
Journal of Home Economics
J. Home Econ.
Journal of Organic Chemistry
J. Org. Chemistry
Journal of Physical and Colloid Chemistry
J. Phys. & Colloid Chemistry
Journal of Physics (USSR)
J. Phys. (USSR)
Journal of Polymer Science
J. Polymer Sci.
Journal of Research of the National Bureau of Standards
J. Research Natl. Bur. Standards
Journal of Scientific and Industrial Research (India)
J. Sci. Ind. Research (India)
Journal of Scientific Instruments
J. Sci. Instruments
Journal of the Acoustical Society of America
J. Acoust. Soc. Am.

Journal of the American Chemical Society
J. Am. Chem. Soc.
Journal of the American Oil Chemists' Society (Formerly *Oil & Soap*)
J. Am. Oil Chemists' Soc.
Journal of the American Society of Agronomy
J. Am. Soc. Agronomy
Journal of the American Water Works Association
J. Am. Water Works Assn.
Journal of the Association of Official Agricultural Chemists
J. Assn. Official Agr. Chemists
Journal of the Chemical Society
J. Chem. Soc.
Journal of the Council for Scientific and Industrial Research (Australia)
J. Council Sci. Ind. Research (Australia)
Journal of the Franklin Institute
J. Franklin Inst.
Journal of the New England Waterworks Association
J. New England Waterworks Assn.
Journal of the Optical Society of America
J. Optical Soc. Am.
Journal of the Royal Society of Arts
J. Roy. Soc. Arts
Journal of the Society of Chemical Industry
J. Soc. Chem. Industry
Journal of the Society of Dyers and Colourists
J. Soc. Dyers Colourists
Journal of the Textile Institute
J. Textile Inst.
Jute and Canvas Review
Jute & Canvas Rev.
Knitter
Kolloid-Zeitschrift
Kolloid-Z.
Kunststoffe
Laboratory (Fisher Scientific Co.)
Laboratory
Linens and Domestics
Linens & Domestics
Machine Design
Manufacturers' Record
Mfrs'. Record
Mechanical Engineering
Mech. Eng.
Meddelanden från Svenska Textilforskningsinstitutet (See *Proceedings of the Swedish Institute for Textile Research*)
Melliand Textilberichte
Melliand Textilber.
Mid-South Cotton News
Mikrochemie
Modern Industry
Modern Plastics
Monatshefte für Chemie und verwandte Teile anderer Wissenschaften
Monatsh.
Monsanto Magazine
Monsanto Mag.
Monthly Catalog of U. S. Public Documents
Monthly Checklist of State Publications, Library of Congress
National Canvas Goods Manufacturers Review
Natl. Canvas Goods Mfrs. Rev.
Nation's Business
Natural & Synthetic Fibers
Nature
Norsk Tekstiltidende
Official Gazette of the U. S. Patent Office
Oil, Paint & Drug Reporter
Oil, Paint & Drug Reptr.
Paper Mill News
Paper Trade Journal
Paper Trade J.
Papers of the American Association of Textile Technologists
Papers Am. Assn. Textile Technologists
Papier-Fabrikant
Papier-Fabr.
Patent-Liste (Swiss Patent Office)
Philips Technical Review
Philips Tech. Rev.
Philosophical Magazine
Phil. Mag.
Physical Review
Phys. Rev.
Physikalische Zeitschrift
Physik. Z.
Plastics
Platt's Bulletin
Platt's Bull.
Power
Proceedings of Koninklijke Nederlandsche Akademie van Wettenschappen
Proc. Kon. Ned. Akad. v. Wet.
Proceedings of the American Society of Civil Engineers
Proc. Am. Soc. Civil Engs.
Proceedings of the Institute of Radio Engineers and Waves and Electrons
Proc. Inst. Radio Engs.
Proceedings of the National Academy of Sciences
Proc. Natl. Acad. Sci.
Proceedings of the Royal Society (London)
Proc. Roy. Soc.
Proceedings of the Swedish Institute for Textile Research
Proc. Swed. Inst. Textile Research
Product Engineering
Product Eng.
R. C. A. Review
R. C. A. Rev.
Rayon Organon
Rayon Textile Monthly
Record of Chemical Progress
Record Chem. Progress

Recueil des travaux chimiques des Pays-Bas
Rec. trav. chim.
Refrigerating Engineering
Refrig. Eng.
Research Engineer
Research Engr.
Resins-Rubbers-Plastics
Review of Scientific Instruments
Rev. Sci. Instruments
Reviews of Modern Physics
Rev. Modern Physics
Rohm & Haas Reporter
Rohm & Haas Reptr.
Rubber Age (New York)
Rubber Age (N. Y.)
Saco-Lowell Bulletin
Saco-Lowell Bull.
Safety Engineering
Safety Eng.
Science
Science Abstracts (A)
Sci. Abs. (A)
Scientific Monthly
Sci. Monthly
Sewage Works Engineering
Sewage Works Eng.
Sewage Works Journal
Sewage Works J.
Shirley Institute Memoirs
Shirley Inst. Memoirs
Silicate P's and Q's
Silicate P's & Q's
Silk and Rayon
Silk & Rayon
Silk Journal & Rayon World
Silk J. Rayon World
Society of Automotive Engineers Journal
Soc. Automotive Engs. J.
Southern Power and Industry
Southern Power & Industry
Southern Textile News
Special Libraries
Staley Journal
Staley J.
Svensk Papperstidning
Svensk Tidskrift för Industrielt Rättsskydd
Svensk Tids. Ind. Rättsskydd
Synthetic Organic Chemicals
Synthetic Org. Chem.
Technical Book Review Index
Tech. Book Rev. Index
Technical News Bulletin of the National Bureau of Standards
Tech. News Bull. Natl. Bur. Standards
Technology Review
Technol. Rev.
Tekstil'naya Promyshlennost
Tekstil'naya Prom.
Tele-Tech
Textielwezen
Textil och Konfektion
Textil-Rundschau
Textile Age
Textile Bulletin
Textile Bull.
Textile Colorist and Converter
Textile Colorist
Textile Forum
Textile Industries
Textile Journal of Australia
Textile J. Australia
Textile Manufacturer
Textile Mfr.
Textile Mercury & Argus
Textile Recorder
Textile Research Journal
Textile Research J.
Textile Weekly
Textile World
Tidsskrift for Textilteknik
Tids. Textilteknik
Transactions of the American Society of Mechanical Engineers
Trans. Am. Soc. Mech. Engs.
Transactions of the American Society for Metals
Trans. Am. Soc. Metals
Transactions of the Danish Academy of Technical Sciences
Trans. Dan. Acad. Tech. Sci.
Transactions of the Faraday Society
Trans. Faraday Soc.
Traveler
Verfkroniek
Warp Sizing Specialist
Weight Engineering
Weight Eng.
Whitin Review
Whitin Rev.
Wool Record and Textile World
Wool Record & Textile World
Zeitschrift für analytische Chemie
Z. analyt. Chem.
Zeitschrift für Elektrochemie
Z. Elektrochemie
Zeitschrift für Instrumentenkunde
Z. Instrumentenkunde
Zeitschrift für Physik
Z. Physik
Zeitschrift für physikalische Chemie
Z. physikal. Chem.
Zeitschrift des Vereins deutscher Ingenieure
Z. Ver. deut. Ing.
Zellwolle und Kunstseide